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ABSTRACT

This monograph outlines a model procedure for developing and running a community vocational transition center that would assist workers in making various planned and unplanned vocational transitions throughout their lives by offering a comprehensive array of vocational assessment and transition services. The first chapter addresses the question of whether a community vocational center can be competitively positioned. The next three chapters discuss the steps entailed in conducting a feasibility study, profiling center services, and establishing a center. Chapter 5 describes the following specific assessment services that can be offered to clients: literacy, abilities/skills, physical demands, interests, work behaviors and attitudes, vocational aptitude, psychological, and comprehensive. The sixth chapter describes the following five services related to referral and placement: occupational exploration, job/training matching, job-seeking skills, vocational and educational counseling, and living skills assessment. Some possible service combinations are explored in chapter 7. Chapter 8 is devoted to the service process, and chapter 9 deals with program evaluation. A 10-page reference list is followed by appendixes including an initial interview form and addresses of developers of tests, assessments, and work samples. (MN)

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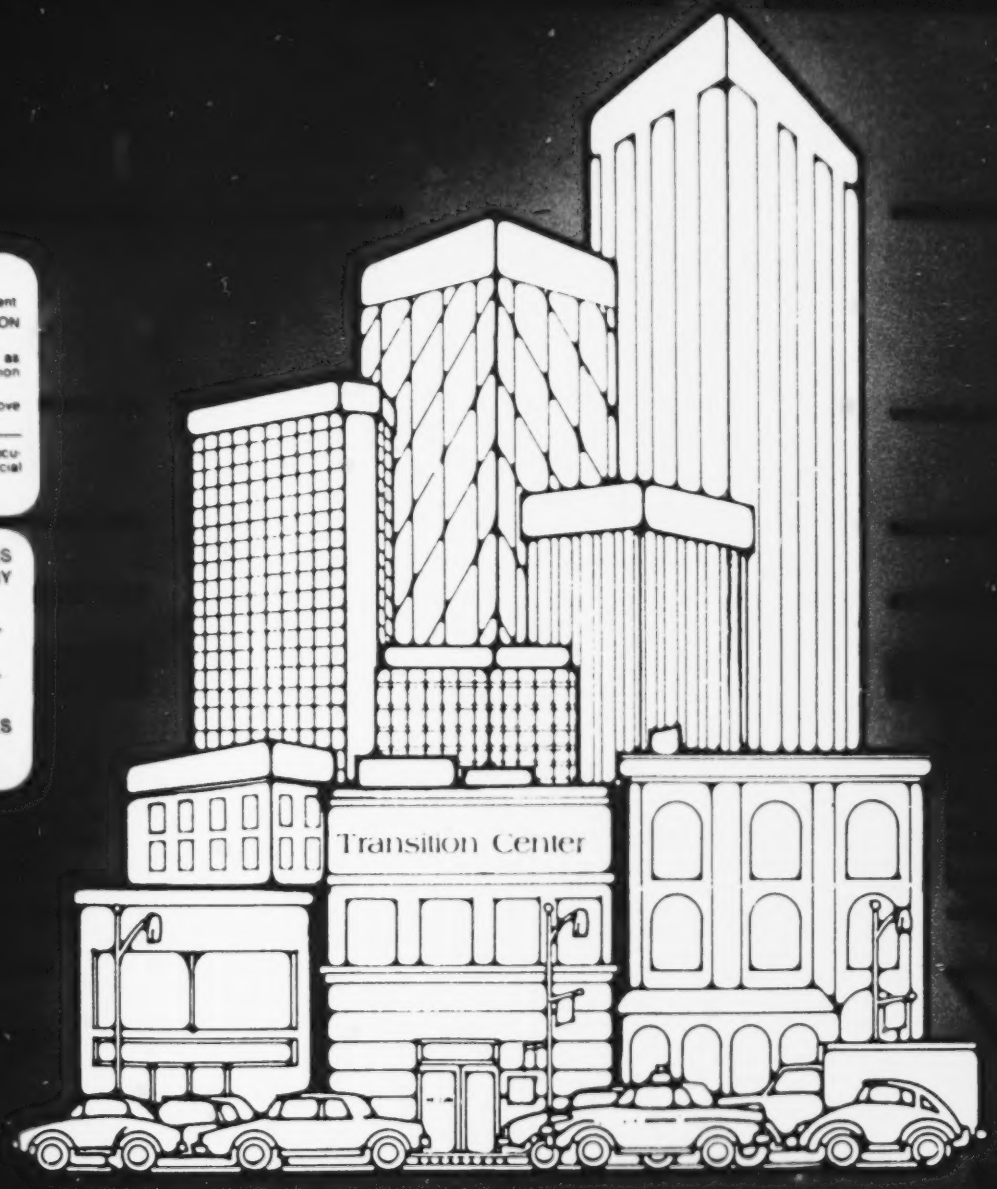

The Community Vocational Transition Center

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Introduction

The past seven years or so have witnessed several major changes in vocational rehabilitation facilities. By the end of the 1970's and early 1980's, many persons both inside and outside government were acting as if rehabilitation facilities were beyond hope and incapable of change. The major thrust in vocational rehabilitation was to move persons with disabilities from the workshops to competitive employment. The emphasis was on transitional employment and supported work. Changes in funding and funding cuts made it clear that facilities could no longer continue to operate in accustomed ways.

One of the most positive aspects of these forced changes was that many private, non-profit facilities began to expand beyond their physical and psychological walls with a renewed spirit. The place-train service provision model has been adapted by many (Wehman and Hill, 1985); this has lead to enclaves within industry, establishing of service contracts, job coaching, and an ever increasing emphasis on direct placement. With some facilities, the breaking of walls between facility and community has lead to new ventures. For example, many facilities are evaluating, training, and placing worker's compensation clients; others are working with welfare recipients. Thus, while expanding into the community has meant significant changes in services provided to persons traditionally served in facilities, it is also beginning to mean a realization that the services provided by facilities can also benefit much larger segments of the community.

One of the most unique services provided by facilities is vocational evaluation and assessment. Although schools, community mental health clinics, psychologists in private practice, and guidance clinics offer a wide variety of testing and other related services, there is usually no other service available within the community that focuses on vocational decision making to the extent offered by a vocational evaluation unit. The experiences, knowledge, techniques, and expertise of persons trained in vocational evaluation and assessment can easily be generalized to provide service to many persons within the community. Thus, the first theme of this publication is that experience gained from working with persons with disabilities can be used to help other populations with vocational problems.

The second theme is "transition." As initially popularized by Madeline Will (1984), transition was rather closely defined as the process of moving students with disabilities from secondary school programs to competitive employment. However, if we look at adults of all ages, it becomes obvious that most persons make several major transitions during their life times. Some examples are: from single to married, geographical changes, becoming parents, and retirement.

A person also makes many planned and unplanned vocational transitions during his/her life. The unemployed steel worker who now must find a new career, the person changing careers at age 45, the recent high school graduate who does not know her abilities and interests, the welfare recipient who wants to be independent, the recovering alcoholic who must find a new life style, and the dislocated homemaker are only some examples of persons making vocational transitions.

Combining the themes of "transition" and "vocational assessment", we arrived at the idea for the Community Vocational Transitional Center. We envision this to be a branch of a rehabilitation facility that will offer vocational assessment and other closely related services to the public at large, regardless of age, employment status,

ability, or disability. These would be standardized, closely defined services offered at an attractive price to individuals and third party payees. The goal of this center is to assist persons in making practical, realistic vocational choices through the use of state-of-the-art technology and information.

There is also a personal reason for this publication. In the last three years, the Materials Development Center has published several monographs dealing with various aspects of the vocational evaluation or assessment process and with specific tools that can be used: Testing and Test Modification in Vocational Evaluation, Revised MDC Behavioral Identification Form, A Comparison of Computerized Job Matching Systems, Report Writing in Assessment and Evaluation, and Vocational Assessment and Evaluation Systems: A Comparison. Although each of these publications contained a large body of information about specific products and procedures, they did not provide any information on how to combine these various techniques into a workable model for assessment. MDC has had many telephone calls and letters asking how to use these products within either current or planned evaluation services. This publication attempts to provide one model for their use. Hopefully, this model will provide guidance for the young and dynamic field of vocational evaluation.

Finally, we would like to thank Ms. Peg Beall and Ms. Kyle Vohlken of the Career Assessment Center in Holland, Michigan and Ms. Marsha Andersen of Vector, Inc. in Westminister, California. Both of these organizations offer many of the services described in this publication. Dr. Stan Karcz of the Center for Correctional Education at Stout provided helpful references and information on juvenile offenders.

Chapters one through three and nine were written by Christopher Smith; chapters four through eight were written by Karl Botterbusch.

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Christopher A. Smith, M.S.

May, 1988

CHAPTER 1

Can a Community Vocational Center be Competitively Positioned?

A community vocational center may help vocational rehabilitation facilities to provide a much needed service to your community. In the process, it may help the facility meet its not-for-profit service mission to the community.

The community vocational center is established to provide a wide range of individually tailored vocational services to both disabled and non-disabled persons. The services may be designed to help all persons make transitions from unemployment or underemployment to competitive employment.

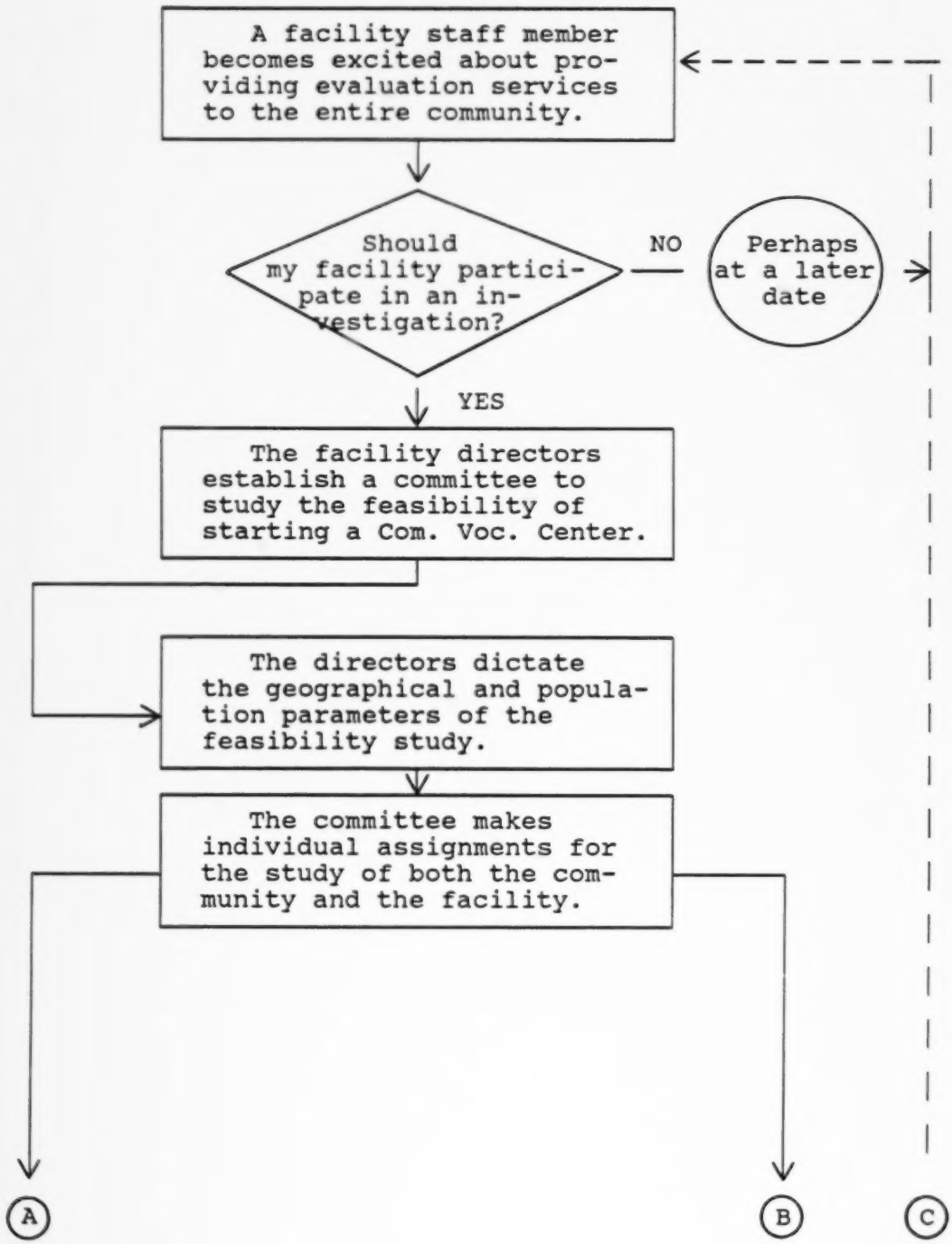
Thus, the emphasis of this center is to provide the services the entire community needs for vocational assessment and other vocationally oriented services. This expands the concept of vocational assessment to include non-traditional clients; it is anticipated that the majority of the clients of such a center would be non-disabled. Because many clients of the community vocational center would be non-disabled, traditional sources of fees for service may be limited or non-existent. Thus, the center will need to be self-sustaining on the basis of non-traditional sources of fees for service.

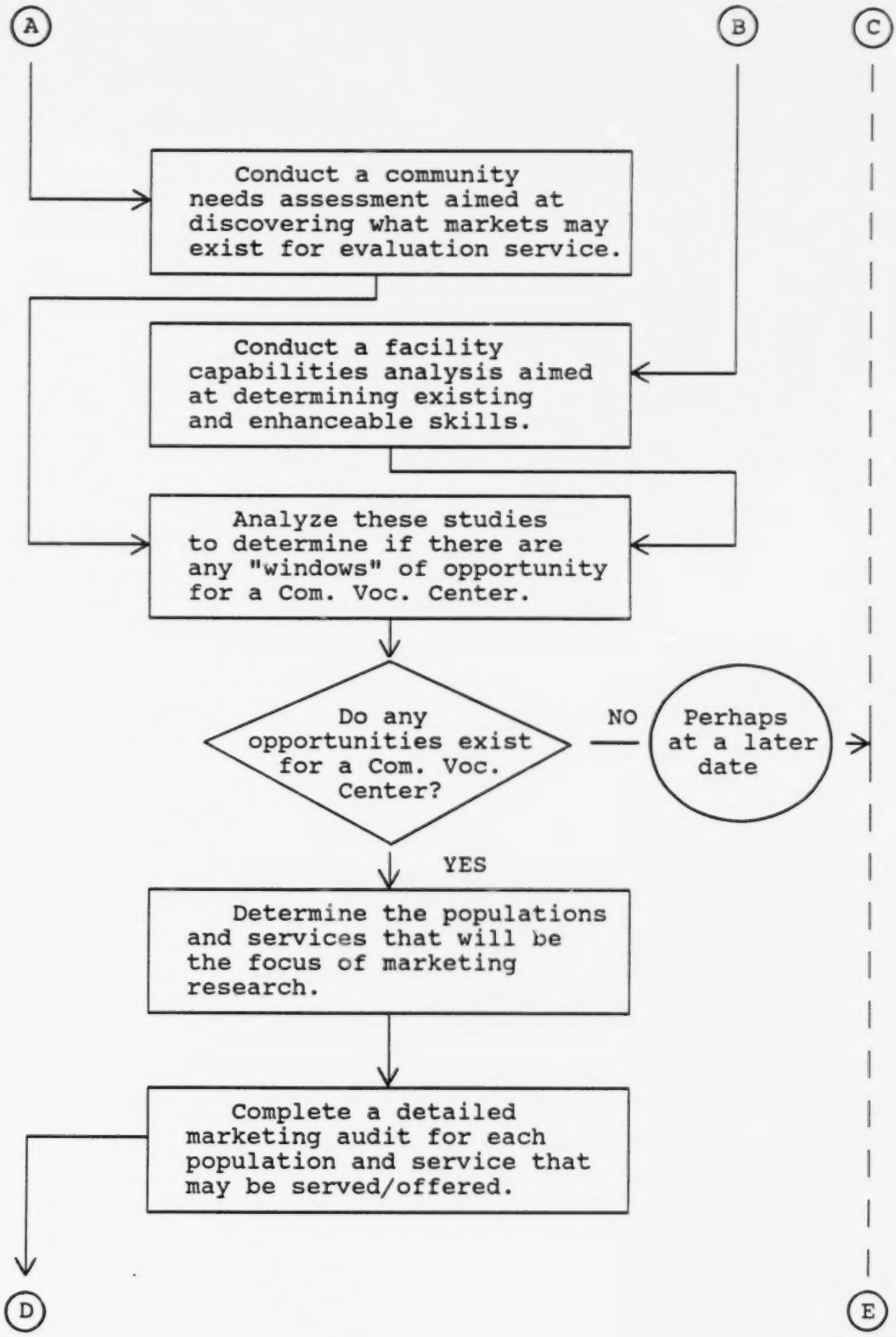
Knowing that the center will serve non-traditional clientele and rely on non-traditional sources of revenue to meet its operating expenses, facility administrators need to carefully assess the community's vocational service market to determine if an investment in a community vocational center will be returned. Further, because many other community organizations may be providing elements of the vocational service market, the facility must be able to competitively "position" the vocational center to capture a large enough share of the service market to survive.

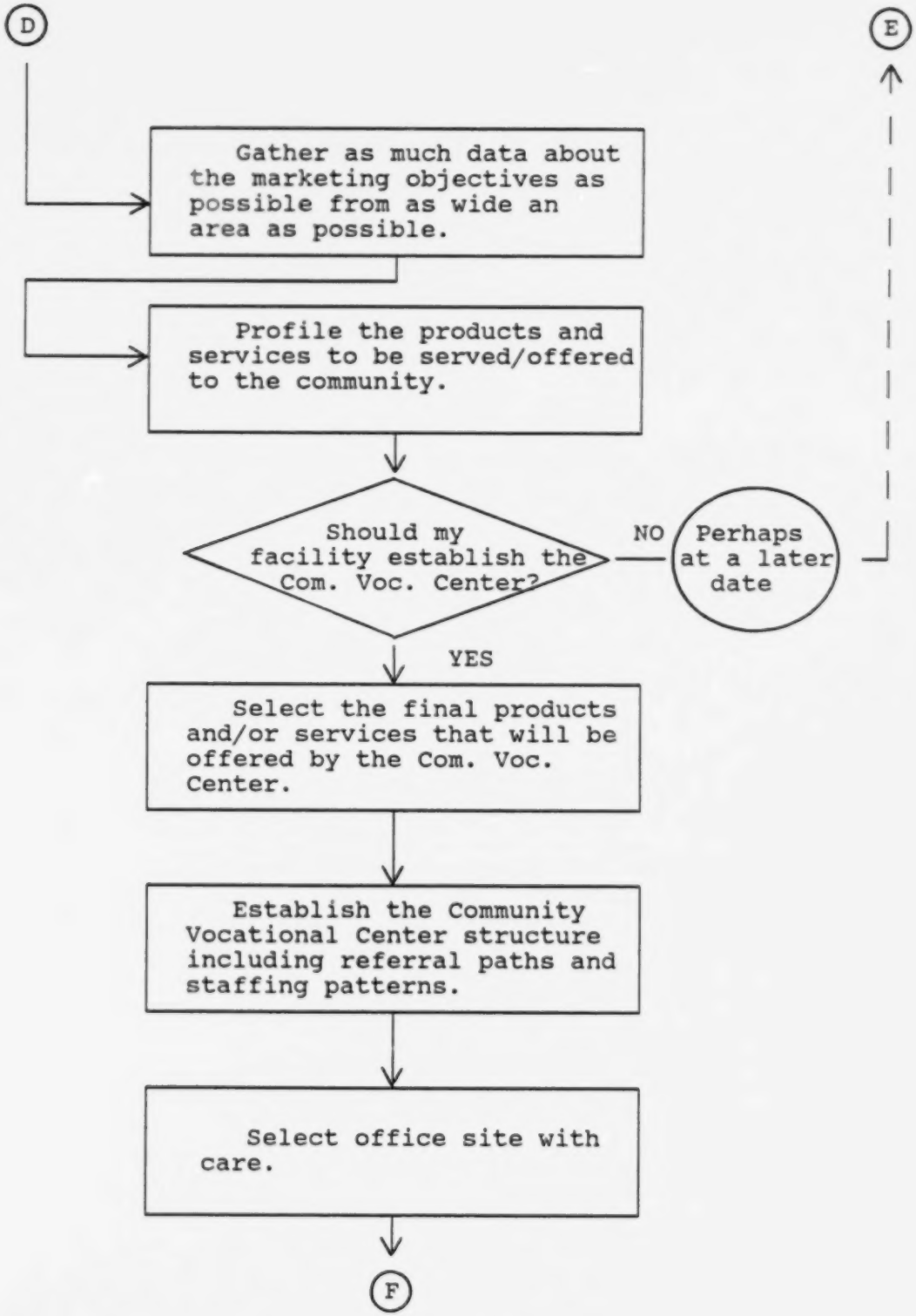
The determination that the facility can successfully position a community vocational center must be made before the center is established. Thus, the facility should systematically conduct needs analysis and market research before committing to the creation of a center. This implies that a formal process may be followed that will lead to the establishment of a center. Such a process is outlined in Figure 1.

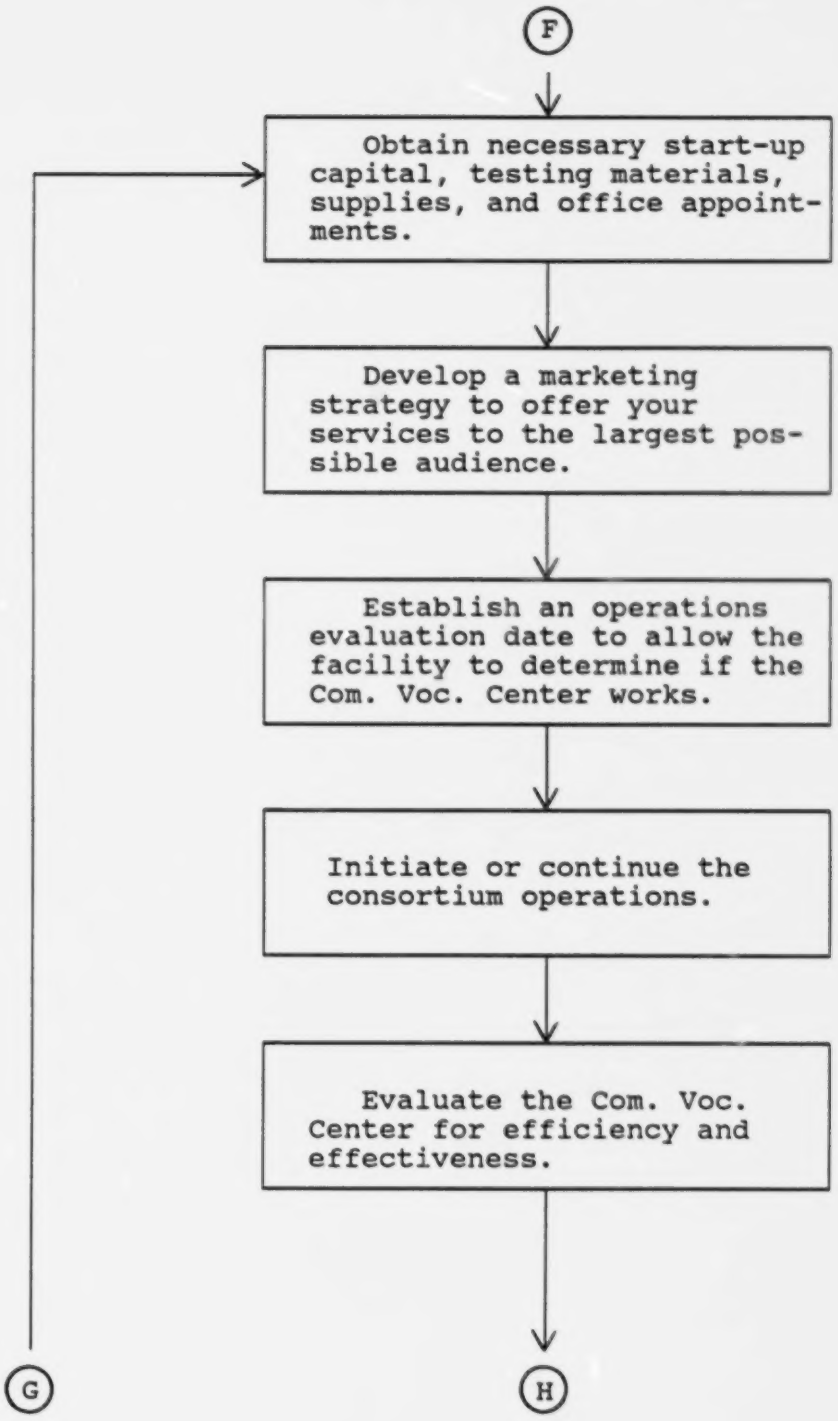
FIGURE 1

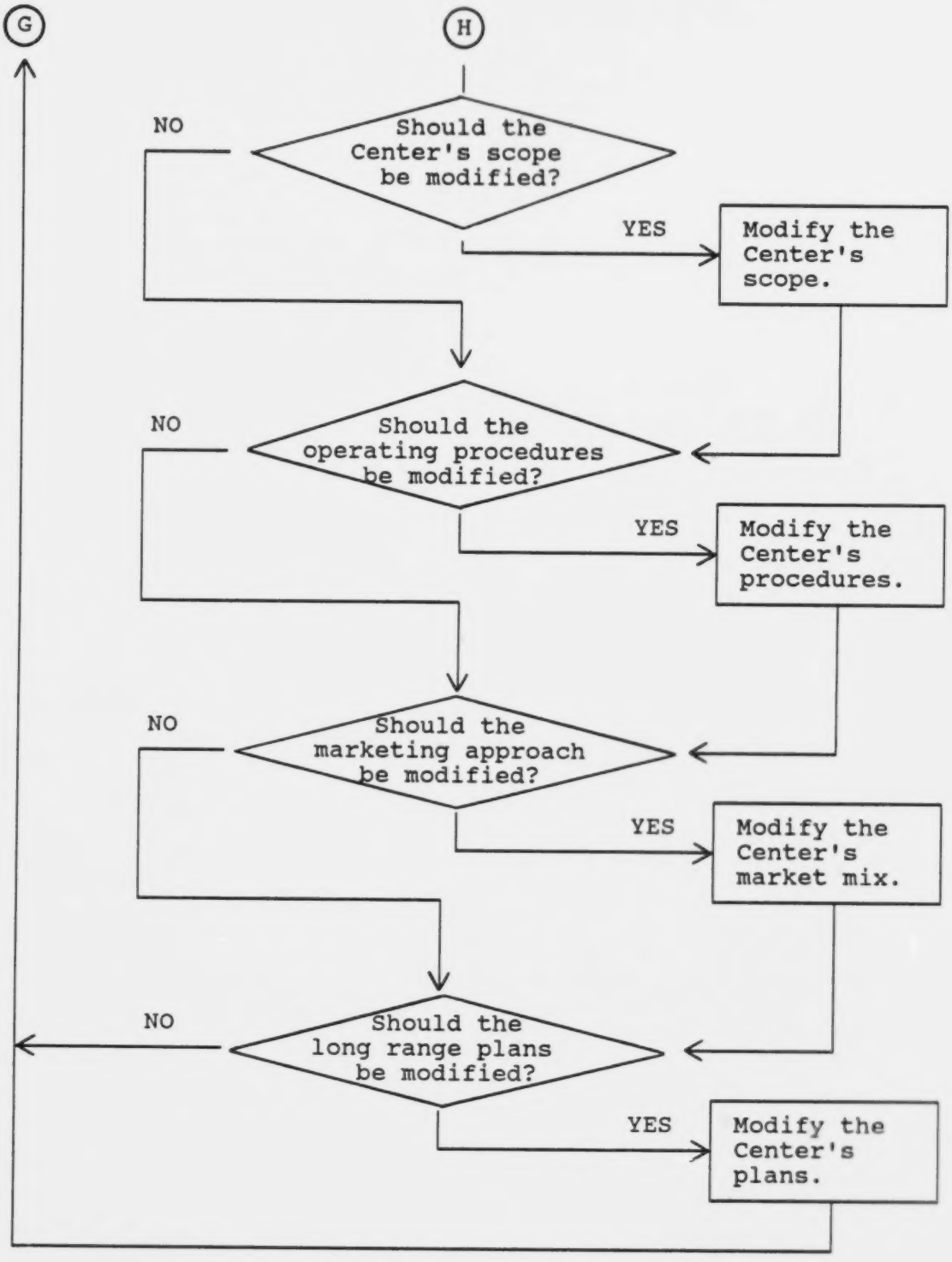
Decision Path for Developing a Community Vocational Center


A facility staff member becomes excited about providing evaluation services to the entire community.
Should my facility participate in an investigation?
NO
Perhaps at a later date
YES
The facility directors establish a committee to study the feasibility of starting a Com. Voc. Center.
The directors dictate the geographical and population parameters of the feasibility study.
The committee makes individual assignments for the study of both the community and the facility.
A
B
C


A
B
C
Conduct a community needs assessment aimed at discovering what markets may exist for evaluation service.
Conduct a facility capabilities analysis aimed at determining existing and enhanceable skills.
Analyze these studies to determine if there are any "windows" of opportunity for a Com. Voc. Center.
Do any opportunities exist for a Com. Voc. Center?
NO
Perhaps at a later date
YES
Determine the populations and services that will be the focus of marketing research.
Complete a detailed marketing audit for each population and service that may be served/offered.
D
E


D
E
Gather as much data about the marketing objectives as possible from as wide an area as possible.
Profile the products and services to be served/offered to the community.
Should my facility establish the Com. Voc. Center?
NO
Perhaps at a later date
YES
Select the final products and/or services that will be offered by the Com. Voc. Center.
Establish the Community Vocational Center structure including referral paths and staffing patterns.
Select office site with care.
F


F
Obtain necessary start-up capital, testing materials, supplies, and office appointments.
Develop a marketing strategy to offer your services to the largest possible audience.
Establish an operations evaluation date to allow the facility to determine if the Com. Voc. Center works.
Initiate or continue the consortium operations.
Evaluate the Com. Voc. Center for efficiency and effectiveness.
G
H


G
H
Should the Center's scope be modified?
NO
YES
Modify the Center's scope.
Should the operating procedures be modified?
NO
YES
Modify the Center's procedures.
Should the marketing approach be modified?
NO
YES
Modify the Center's market mix.
Should the long range plans be modified?
NO
YES
Modify the Center's plans.

As in every endeavor, the process is started through the interest and action of at least one person. In this case, a facility staff member becomes excited about the possibility of providing vocational services, vocational assessment in particular, to all community citizens.

Because the concept of creating a new center requires board level approval, it is likely that the idea will originate with top level (CEO) management. However, this need not be the case. In any case, the originator of the community vocational center development idea must propose the investigation of the concept to the facility's board. The concept, thus, may be shelved at the idea stage before any investigation of prevailing market conditions is made.

Clearly, the investigation will consume facility time and resources. Though the board may participate in the investigation, it is likely that a community vocational center feasibility study committee will be established to conduct an analysis of both the community's need for such a center, and the facility's ability to provide such a center.

The facility director(s) must charge the committee to conduct such studies and provide geographic and population parameters for the studies. For example, the directors may ask the committee to conduct feasibility studies for a center that would serve only one county, several counties, or an even larger area. They may also state that the service(s) that will be provided through the center is limited to vocational assessment, vocational assessment and other services, or the complete vocational spectrum. Further, the directors may specify that feasibility be established for one non-traditional client population, several non-traditional populations, or the community at large.

The establishment of parameters for the feasibility study is important. The directors should also limit the amount of time that the committee is granted to complete the investigation. The time limit should be short. It is far easier to extend the deadline than shorten the study. Feasibility studies tend to consume any and all time that they are alloted. Thus, a study conducted under a two week deadline that may be extended at the discretion of the director is just as likely to gather meaningful data as a study conducted with a two month deadline.

Remember that this is a preliminary study designed only to provide the directors with data to make a rough determination of the availability of "windows" of opportunity that may provide a way in which a new center may operate. Thus, after a community needs assessment and a facility capabilities analysis have been completed, the directors will analyze the compiled data to determine that further investigation is warranted and the areas in which further investigation should occur.

At this point the facility board should again be consulted. Do, in fact, opportunities exist that would suggest that the community vocational center would be a valuable asset? Should the facility complete a detailed marketing audit in preparation for the establishment of a center? Or should the idea of establishing a community vocational center be killed or shelved until a later date?

If further investigation is authorized, the director(s) will again set parameters for the completion of a detailed marketing audit. At minimum, the parameters should include the services to be provided and the clientele to be served. Like the feasibility study, the marketing audit must be time limited. It is likely that more time will be provided the audit committee to complete its study because the questions of

viability will now attempt to "flesh out" the operation of the center. Three to four weeks is certainly enough time to cover the data gathering. The deadline should be closely observed because the board will need time to fully consider the collected data before committing facility resources to the creation of the center.

The "fleshing out" that is completed through the marketing audit entails gathering as much data about the marketing objective(s) as possible from as wide an array of "subject matter experts" and other data sources as possible. The audit will produce a profile of the products and services under investigation, include market or market segment size, preferences, and response medium.

Using these data, the facility board may decide to stop the development of a community vocational center, shelve the idea until a later date, or establish the center. In any case, these data will provide the directors with options for the formal product/service offering that will be made to the community through the center.

If the board decides to establish the center, they will authorize the facility director to make the necessary arrangements to structure, staff, position, capitalize, market, and evaluate the center. The director may choose a project director to coordinate the establishment of the center or give the project to a select committee. In either case, the board will dictate the scope of services to be provided.

The physical establishment of a community vocational center will probably proceed on several fronts at once. Referral and staffing structures need to be placed into written form. An office/service site must be selected. Testing/training materials and supplies must be obtained and office furniture selected. The all important marketing plan must be written and advertising strategies placed in operation. Finally, a program evaluation process must be drafted and a starting date be established for this evaluation.

After all the foregoing details have been completed, the center is ready to begin operations. Initially, the center should evaluate its efficiency and effectiveness at rather short intervals. These evaluations may be limited in scope, encompassing only a review of referral patterns, advertising effectiveness, and/or budget discrepancies. They should be reviewed once per month.

A more extensive review of the center's operations is conducted after six months of operation. This review must include the service provision process. At this point, initial estimates of client flow, center capacity, and/or closure rates should be examined. Any minor adjustments can be incorporated into the center operations.

A full program evaluation should be completed after twelve months of operation. This evaluation should examine all facets of the center's scope, operating procedures, marketing approach, and long range plans. Any changes at this point are likely to require extensive reorganization of the center. It is at this point that the continued operation of the center should be discussed. Is the center providing effective, efficient, and needed community services? If not, can the center's operations be restructured to make them effective, efficient, or meeting community needs? If not, should the center be continued?

If changes are made to the center's scope, operating procedures, marketing approach and/or long range plans, they will be incorporated into the center through the purchase of new materials/supplies/equipment/staff and/or the development of new

marketing strategies. Even if no changes are made, new evaluation points must be established to assure continued review and updating of the program elements.

Because so many elements are involved, the investigation and establishment of a community vocational center must be carefully planned. Planning helps assure that all of the elements leading to success will be considered by the development team. The planning process may also provide a vehicle for the facility to gain support from staff and other stakeholders.

The committee charged with investigating (and eventually establishing) a community vocational center should be given a set of planning guidelines to help structure their limited time. An example of a plan is found in Figure 2.

After a center has been established, the planned program evaluation steps, included in the implementation plan, may be easily implemented. Thus, the use of an investigation/installation plan can lead to a continuing process of review and restructure.

FIGURE 2

An Investigation/Installation Plan

STEP	DESCRIPTION	ASSIGNED	STARTED	COMPLETED
1	Committee parameters established			
2	Conduct community needs analysis			
3	Determine facility capabilities			
4	Analyze data to find center opportunities			
5	Board considers go/no go for further study			
6	Set parameters for marketing audit			
7	Complete a marketing audit			
8	Board considers go/no go for establishing the community center			

FIGURE 2 (continued)

9	Parameters for the services/populations determined			
10	Referral and staffing procedures are written			
11	Office/service site selected			
12	Testing/training materials/equipment and office furnishings obtained			
13	Marketing plan written and advertising developed			
14	Evaluation process drafted and trigger date established			
15	Center begins operation			
16	Review completed after each month of operation			
17	Extensive review of process after 6 months			
18	Full program evaluation completed after 12 months of operation			
19	Needed changes are implemented			
20	Continuous monitoring			XXXXXXXX

Facility administrators should build the planning team with representation by facility staff and other stakeholders. Their involvement may help strengthen the internal commitment of the facility to the development process. Involvement in the process should also be generated by providing information/response opportunities to staff. Such opportunities may include:

A. Meeting with small groups of staff and stakeholders to describe the need for the center and the specifics of the development process.

B. Encouraging suggestions on how the investigation and development process may best be carried out.

C. Being responsive to any concerns voiced by staff and stakeholders regarding the operation of the center and the impact it may have on other facility operations.

D. Stressing the benefits the center will provide. Such as improvement of facility-based services, increased ties to the community, and greater non-traditional fee generating capabilities.

The following chapters detail the main elements of this development process. In Chapter 2, the gathering and analysis of community needs and facility capabilities is discussed. The completion of a marketing audit and the development of marketing strategies is discussed in Chapter 3. The establishment of a center is discussed in Chapter 4, including how to determine what materials/equipment are needed, the organizational structure, pricing, and the physical location of the center. Areas of service provision are outlined in Chapters 5 through 7. Chapter 5 concentrates on assessment services, Chapter 6 on referral and placement services, and Chapter 7 on service combinations. In Chapter 8, the center's operational process is examined. This includes referral and intake, screening, scheduling, clinical decision-making, reporting, referral, and follow-up. Finally, Chapter 9 provides a discussion of the evaluation of the center at regular intervals.

CHAPTER 2

Conduct a Feasibility Study

Now charged with the dual tasks of determining if the vocational center is feasible within the community and if the facility is capable of operating the center, the investigation/implementation committee must organize for data gathering. Because facility administrators are interested in matching capabilities with community needs, the committee needs to coordinate two studies: a community needs analysis and a facility capabilities analysis.

By assigning the studies to two sub-committees both tasks may be completed faster than if they are conducted sequentially. Even more important, the two groups will provide less biased approaches to the intermeshed studies, thus allowing market opportunities to be clearly identified.

Organizing for Data Collection

The committee will access several data sources. Figure 3 lists sources of data about the facility markets and its community environment. Data for a limited feasibility study should be gathered from existing "hard" data sources and through interviews with individuals. More extensive studies may use some marketing research techniques.

FIGURE 3

Sources of Feasibility Data

Current Customers
Government Supplied Market Research Surveys
Chamber of Commerce Publications
Social Service and Vocational Rehabilitation Agencies
Knowledgeable Individuals
Sample of Potential Users

The committee should plan it's data gathering strategy. The four strategies it can use to gather data are: situation analysis, market measurement, response strategy, and evaluation processes. Situation analysis is an approach that determines the impact of changes in demographics, economics, politics, or other factors. In market measurement, the emphasis is upon determining the number of customers and their desires. Using a response strategy the committee will concentrate on ways to change their provision of center services to achieve the most desirable consumer reply. Finally, using process evaluation the committee may consider the way the facility provides needed goods or services. The strategy used is determined by the ease with which the strategy provides data specific to the questions asked.

In reality, the committee's time-limited preliminary investigation dictates that only market measurement be used to determine community needs and only the evaluation of processes be used to determine capabilities. Situation analysis will be used later when the committee is developing strategies to meet chosen marketing objectives. Response strategy is employed to "fine-tune" the strategies after they have been implemented and data about the meeting of marketing objectives begins to be gathered.

McCready (1982) presented a strategy formulation process paraphrased in Figure 4. The process's six steps move from preliminary assumptions based on a brief "pilot" study, to the actual gathering of marketing data. Central to the process is organization. The committee must resist the temptation to simply begin gathering data without a format. The analysis and objective formation stages of the process will be much simpler if the data are gathered according to a systematic and organized plan.

FIGURE 4

A Strategy for Gathering Data

A. Conduct a Preliminary and Brief Investigation

Quickly determine the data that needs to be gathered and who may have the data you need. Sometimes a few telephone calls may be all that is needed. Evaluate the situation before jumping into the major effort.

B. Decide What Information is Needed

Your brief investigation will help you determine the data you need to gather. Establish clearly written statements reflecting these needs. Too much data confuses an issue; insufficient data frustrates the achievement of accurate results.

C. Evaluate Available Resources

Determine the amount of time, energy, and people that can be made available to gather the information. Insufficient resource allocation is often a cause of study results with a low degree of reliability.

D. Plan the Data Gathering Process

A wide variety of research techniques including mail surveys, personal interviews, client diary-keeping, observation, statistical analysis, brainstorming, gathering data, using idea generators, and needs assessment are available for use by the committee. The nature of the particular feasibility study or marketing audit determines the best combination of data gathering techniques.

E. Gather Only Relevant Information

Be sure that all data is cataloged according to source, date of receipt, reliability, and so on. This step can be taken by mailed questionnaires, personal interviews, or the review of published literature.

F. Process All Information According to Some Meaningful and Logical Order.

Apply the data directly to the central question. In what way is this particular finding significant to the facility's development of a community vocational center? To what degree does this information help us understand the potential of the center to operate?

Let us look at two of the most used information gathering methods in more detail.

Brainstorming - Using this technique, the committee invites subject matter experts to discuss feasibility questions with the committee. They draw upon personal knowledge about possible center clients/services to provide data about the potential center's operation. As each person provides information, other participants build upon the information presented. This provides greater insight into possible center operations. This technique is especially useful for feasibility and/or marketing audit questions with open ended or multiple answers. Even when other techniques provide basic information, the brainstorming technique permits the generation of possible implications and directions.

Published Sources - While completing its auditing task, the committee will encounter areas, such as "Who are potential center customers?", where information may be best gathered from other sources. Some possible sources of information about the potential center's environment include those found in Figure 5 below.

FIGURE 5

Sources of Published Information

Intergovernmental agencies
Local Chamber of Commerce
Better Business Bureaus
Business publications
Federal and State statistical deposits
State planning offices
Job Service offices
Census Office

Community Needs Assessment

The committee may also use needs assessment to determine areas of marketing opportunity. The definition of "need" is a description of a difference between what "is" and what "is desired or ought to be." Needs assessment can provide the functions of identification and validation of present and potential center marketing areas and the establishment of service priorities. Needs assessment can cover the entire operation of a facility or be confined to one specific area (like the establishment of a community vocational transitional center) that is researched in detail.

Basic to needs assessment is opinion polling. In opinion polling needs assessors should approach a wide variety of people who have special knowledge, interest, influence, or other vestment in the areas to be assessed. It is not enough to only gather reactions from one source. Although many opinions will be gathered, resist the temptation to use the needs identification information in a "referendum" manner to develop marketing plans. Use the same formats for obtaining information from each person who gives information.

Each facility will have a special mix of interested parties with opinions about the "is needed or ought to" portion of the needs assessment equation for establishing a community vocational center. Surely the following persons listed in Figure 6 below should be considered "stakeholders."

FIGURE 6

Stakeholders in the Development Process

Facility staff
Facility management (including directors and boards)
Inter-relating agencies
Accreditation bodies (and licensing associations)
Program clients
Third party payors
Interested public (parents, legislators, etc.)

Discovering new service possibilities can also use state-of-the-art modeling to investigate omitted areas. The emphasis in needs assessment is the finding of "gaps" between state-of-the-art and status quo. Thus, the task of opinion polling is to gather data about the best model possible without reference to negative reasons that the best possible model may not be feasible. The facility marketing plan will eventually convey information about the new center's ability to "close the gaps" that have been found. This approach to needs assessment, thus, relies on state-of-the-art modeling.

By starting with state-of-the-art models, the marketing committee cuts a path through the multitude of possible alternatives for marketing objectives. The examination of the facility mission and an investigation of the competencies of staff and the processes used to carry out those missions may eventually provide the investigative committee with data that allows decisions to be made between many possible marketing alternatives.

The committee should provide documented evidence of needs. This will usually take the form of a prioritized listing of possible services. This list of service objectives set by the investigation committee provides a starting point for the facility. Figure 7 outlines the steps to follow when gathering information using a marketing needs assessment.

FIGURE 7

Steps in a Marketing Needs Assessment

Determine state-of-the-art service delivery.
Determine the present state of facility service delivery.
Identify gaps between state-of-the-art delivery and the status quo.
Rank the gaps in relation to mission completion.
Determine the feasibility of closing priority gaps.

Facility Capabilities Analysis

To determine the facility's capabilities relative to the establishment of a community vocational center, the investigative sub-committee must first determine a strategy for gathering information about the facility, its products, services, buildings, and resources. The committee may wish to consult with individuals from various facility departments to provide "testimony" about the current facility operations. It may gather documents showing how the facility has been operating.

To do their job properly, the committee members should be given authority to gather information from any source within the facility. However, the committee needs to have time constraints and, thus, must gather capabilities data in the shortest amount of time. This usually requires that the committee use a predetermined set of questions about the facility called a facility capabilities audit (See Figure 8).

FIGURE 8

Facility Capabilities Audit

A. HOW WILL A COMMUNITY VOCATIONAL CENTER RELATE TO THE BUSINESS THAT THE FACILITY IS REALLY IN?

Ask questions like: What do our products and services do for customers? Why? When? Where? How? What don't they do? What should they do? These questions can lead to the ultimate conclusion of what business the facility is in and how a community vocational center will "fit in."

_____
_____
_____
_____

B. WHAT OTHER PRODUCTS/SERVICES OF THE FACILITY ARE RELATED TO THE SERVICES THAT MAY BE OFFERED BY THE CENTER?

Product/service

1. _____
2. _____
3. _____
4. _____
5. _____

C. AGENCY RESOURCES

1. Operations

List the basic operations, for example, cut and sew, machine and assemble, etc., your facility is capable of performing.

_____
_____
_____
_____
_____
_____
_____

2. Labor Skills

List the labor skills your facility is capable of providing evaluation and adjustment services for.

Skill Classification	Number Needed	Rate of Pay	Number Available

List the indirect labor, for example material handlers, stockmen, janitors, and so on, that are needed to keep the program operating.

Skill Classification	Number Needed	Rate of Pay	Number Available

If persons with these skills are not already on your payroll, where will you get them?

3. Space

How much space will you need for this operation? Include restrooms, storage space for raw material and for finished products, and parking facilities if appropriate. Are there any local ordinances you must comply with?

Do you own this space?

Will you buy this space?

Will you lease this space?

How much will it cost?

4. Raw Materials

What raw materials or components will you need, and where will you get them?

Material/parts	Price	Source	Comments

What amount of raw materials and/or components will you need to stock?

Are there any special considerations concerning the storage requirements of your raw materials? For example, will you use chemicals which can be stored only for a short time before they lose their potency?

5. Equipment

List the equipment needed to perform the operations. Indicate whether you will rent or buy the equipment and the anticipated cost.

Equipment	Cost	Rent	Purchase

6. Overhead

List the overhead items which will be needed in addition to indirect labor and include their cost. Examples are: tools, supplies, utilities, office help, telephone, payroll taxes, holidays, vacations, and salaries for your key personnel (sales manager, plant manager, supervisor, etc.)

Analyze the Studies

The data gathered by the committee from the capabilities audit provide a benchmark against which the community need assessment data may be compared. The investigation committee will use the "overlapping" data to suggest areas of "opportunity" that may be embodied in a community vocational center to enhance its ability to provide needed services to the community.

The committee, thus, identifies gaps between current service delivery provided by both the facility and competitors and the delivery that may be provided. Their speculations will be used by the facility board to determine if a detailed marketing audit should be completed.

For example, Rehabilitation Services of Greater Monroe developed a committee to examine the feasibility of starting a community vocational transitional center. Their findings and speculations are as follows:

Subcommittee A of the study committee submitted a report that listed the following services as being desired by the community in a state-of-the-art model:

1. Assess potential skills of mentally retarded/developmentally disabled and congenitally disabled persons.

2. Assess potential skills of traumatically disabled persons.

3. Assess potential skills of physically injured workers.

4. Assess potential skills of school-based special education populations.

5. Assess present skills of private employment applicants.

6. Assess potential skills of alcohol and drug abusers.

7. Assess potential skills of youth offenders.

8. Assess potential skills of private business employment applicants.

Subcommittee B submitted a report that listed the following services as being presently provided by the facility:

1. Assessment of mentally retarded/developmentally disabled persons and congenitally disabled persons.

2. Assessment of traumatically disabled persons.

Subcommittee B also listed the following recommendations for increased services:

1. Existing instruments could be used with most populations.

2. The addition of computerized job matching systems may enhance services.

3. Interest testing must be added to most populations assessed.

4. Physical capacities testing should be augmented.

The full committee must now decide if any of these desired services could be provided by the new center. Obviously, services to mentally retarded/developmentally and congenitally disabled workers could be completely subsumed by the new center. Additionally, assessment of traumatically disabled persons could also be provided. The question now becomes what new populations and services could also fit within present capabilities?

Because the existing instruments could be used with most population groups, those groups that needed no more than the existing state of assessment capabilities could certainly be added. The committee determined that the assessment of alcohol and drug abusers and youth offenders could be added without substantially changing present conditions. Further, the committee determined that the expansion of physical capacities testing should be sought even if the center is not created. Thus, skills assessment of physically injured workers and private business employment applicants could be added to the list of provided services. The committee also felt that the addition of interest testing instruments would be cost effective and allow the potential assessment of school-based special education populations and possibly private

employment agency applicants. It did not believe that the expense of computerized job matching systems was justified at present.

The committee's report, thus, listed the following priorities for service provision:

With no modification:

1. Assessment of mentally retarded/developmentally disabled and congenitally disabled persons.

2. Assessment of traumatically disabled persons.

3. Assessment of alcohol and drug abusers.

4. Assessment of youthful offenders.

With the addition of new physical capacities testing:

1. Assessment of physically injured workers.

2. Assessment of private business employment applicants.

With the addition of interest testing:

1. Assessment of school-based special education students.

2. Assessment of private business employment applicants.

To this report, the committee attached potential number of referral estimates for each population group.

CHAPTER 3

Profile Center Services

Using the data gathered during the feasibility stage, the facility directors may target possible populations to serve and the services to be provided by the community vocational transitional center. The list of populations should be large, and the list of services well within the capabilities of the facility.

Determine Populations to Serve and Services to Provide

Many assessment related services will generalize to a large number of population groups. A limited listing is found in Figure 9 below.

FIGURE 9

Potential Target Populations for Assessment Services

Secondary students in transitional programs
Other secondary students
Disabled workers
Dislocated workers
Workers desiring job changes
Dislocated homemakers
Welfare recipients
Unemployed workers
Juvenile offenders
Alcohol and chemically dependent persons
Employment applicants

To estimate the potential number of referrals that can be expected to use the community vocational center after it is established, it is necessary to expand the information on these populations and the services that they will need. These data will help the directors make a firm go/no-go decision regarding the creation of the center.

The investigation of potential customers and the services they desire will entail the use of a marketing audit tool. This is simply a series of questions that will be assigned the investigative committee.

Like the feasibility study, the committee's first task is to organize these data gathering strategy. The committee is interested in gathering as much information about the populations and services as possible rather than just enough to allow a go/no-go decision. These data will also allow the committee to develop a marketing strategy.

Thus, the committee is likely to use more sophisticated data gathering techniques. Certainly brainstorming and published sources will be helpful for determining where pertinent data may be found, but it will be necessary to conduct interviews and develop surveys to gather enough data to adequately describe the populations and make estimates of their assessment needs and potential referral size.

Research Each Population and Service

The market research needed to determine the assessment services to be provided and estimate the potential referrals will encompass four general areas: service markets, potential referral customers, possible service competitors, and limiting environmental factors.

It is quite likely that research, primarily conducted through questionnaires and interviews, will gather data in all four areas at one time. By including questions about each area on each questionnaire and in each interview, the task of market research may be streamlined.

Service Markets - A market is any group of people or organizations that will potentially use the center. The task of the committee while researching markets is to determine which assessment services are most desired by target markets. Because markets are large groupings of people or organizations, further refinement by classifying large groupings into smaller groupings makes the data analysis more precise. This is called market segmentation. For example, the market of "employment applicants" may include segments of "skilled workers", "new labor market entrants", "applicants to private businesses", "Job Service applicants", and many more.

The committee needs to quantify the segments identified. How large is the segment in terms of numbers, dollars it spends, referrals it generates? What are the characteristics of the market? If detailed information about potential and existing market segments is gathered, the facility marketing strategy can later be developed with more assurance of success.

The ability of a market or market segment to provide referrals or absorb service is called "market potential". The market potential is, thus, an estimate of the service units that the market area can be expected to absorb or provide to the community vocational center.

The potential of the center to accept referrals is compared with the estimated potential of each market segment, and an estimate of the number of referrals that will be made to competitors. The comparison, thus, is between the known ability of the center and an estimate of "market share", or the expected percentage of the total number of referrals that will be made to all service providers.

There are two approaches to estimating market potentials, the buying approach and the possible use approach.

Using the buying approach, the committee attempts to quantify the market in terms of units and dollars of past purchases, the seasonal requirements for services, the way that purchases are made, etc. This approach relies on the gathering of documented (published) sources of information. It results in the most reliable estimate of market potential.

Because the community vocational center concept is likely to enter market areas where no service has been provided, no data records will exist. It has the further drawback that many potential sources of data within a competing service market may be unwilling to share their records.

When using the possible use approach, the committee will attempt to measure the market buying behavior for future services by questioning potential customers. The approach, thus, relies on opinion polling to determine the strength of the market.

Potential Customers - Potential markets, because they are groupings of persons or organizations, are also the community vocational center's source of customers. After quantifying their referral potentials, the committee will need to analyze the customers' reasons for making resource exchanges. To effectively develop a marketing strategy to insure that the community vocational center services are known and effectively used, the committee asks questions that will give insights into the pragmatic, psychological, and social reasons that customers choose one service provider over another.

It is also valuable for the committee to learn the present consumer attitude toward the facility and the facility's services. If the committee can determine how these opinions were formed, it may be able to duplicate or avoid creating any negative opinions when the community vocational center is developed. The determination of consumer interaction with the center will effect decisions about the services that are provided, the manner in which they are provided, the way that they are packaged or processed, and the price that is demanded for their provision. The consumer marketing information will help the center create an image as a desirable deliverer of services. Consumers need to feel confident in your ability to provide needed services, comfortable in their transactions with the center, and certain that they are receiving fair value for their resources.

Consumer analysis relies upon gathering as much information as possible about the potential purchasers of your service, and their wants and needs. Information can be gathered from already published sources. Culley (1974) published an annotated bibliography that offers references to major data sources. Many other sources of consumer information exist. Source books like Culley's list reference material in specific industry categories.

The best sources of information are the consumers themselves. To obtain information from actual consumers, however, will require identifying locations where their

opinions may be obtained and committing time to the gathering of their opinions either through interviews or questionnaires. Some possible sources of direct consumer opinions are found in Figure 10.

FIGURE 10

Research Sources for Selected Populations

	Population	Sources
1)	Secondary students in transitional program	Schools/special ed
2)	Other secondary students	High schools, guidance counselors, parents
3)	Disabled workers	Employers, attorneys, insurance carriers, DVR, worker's compensation
4)	Dislocated workers	Unions, manpower agencies, mental health clinics, voc-tech schools
5)	Career changers	Schools, professional organizations
6)	Dislocated homemakers	Women's shelters, courts, attorneys
7)	Welfare recipients	Welfare agencies, social services
8)	Unemployed workers	Job Service, welfare agencies, social services
9)	Juvenile offenders	Courts, probation, youth offenders programs
10)	Alcohol and drug abusers	Treatment centers, halfway houses, mental health clinics
11)	Employment applicants	Private businesses

Possible Service Competitors - In this freewheeling era for the provision of rehabilitation services, competition must be carefully assessed by all not-for-profit organizations. This does not imply that competition should be "hard nosed" or ignored. If quality services are adequately provided by other organizations, your center should probably choose to specialize in another service area. However, just because another organization provides a service does not mean that your center should ignore the area entirely.

Narrowly defined market areas may limit center exposure to competition, but also narrow the ability of the center to gain referrals. Few not-for-profits will actually operate in a monopolistic environment.

The committee must gather as much information about competitors as possible. An examination of competition greatly enhances the knowledge of the center's operating environment. Competitors may focus on one aspect of a disability population to the exclusion of others or on some service delivery in generalized or specialized ways. This information may lead the center to focus services on other aspects of the population or to offer services in ways that either specialize or generalize.

Limiting Environmental Factors - After looking at markets, customers, and competitors, the committee must apply itself to the examination of other environmental areas. The committee must identify population shifts that may effect referral rates, disability groups that are growing or declining, and changes in community political climate. They must also identify the effects of new technology on the job market and the availability of training personnel.

Centers must plan for the changes that society will certainly force upon them. By failing to read the climate of the market in macroenvironmental terms, the community vocational center can only hope to remain in active operation through luck. This is not to say that every committee that correctly identifies macroenvironmental changes will successfully plan strategies that allowing the center to navigate those changes. However, the committee does give the new center a better chance to compete in a changed environment. The success of a community vocational center in any marketplace is never assured by vision or denied by lack of vision.

A Possible Audit Questionnaire

A questionnaire found in Figure 11 may be modified for use by the investigation committee. It is designed to suggest the types of questions that may be asked in research questionnaires that are administered through the mail or in person.

FIGURE 11

An Example of a Marketing Audit

A. MARKETS

1. AREAS

Where and to whom will the center's services be sold? Describe the market area you will serve in terms of geography and customer profile:

_____
_____
_____
_____
_____
_____
_____

2. TRENDS

What is the sales trend in your market area for center services? What do you expect it to be in five years?

	Product	Source of Data	Aged 5 Years	Current Sales	% Dif	Projected in 5 yr future
1.	_____	_____	____	_____	___	_____
2.	_____	_____	____	_____	___	_____
3.	_____	_____	____	_____	___	_____
4.	_____	_____	____	_____	___	_____
5.	_____	_____	____	_____	___	_____
6.	_____	_____	____	_____	___	_____
7.	_____	_____	____	_____	___	_____

List the name and address of possible sources of marketing data that may be helpful in profiling the community vocational center:

_____
_____
_____
_____
_____
_____

B. CUSTOMERS

How do buyers currently go about buying these products/services? Consider the number of sources generally considered, the degree of overt information seeking, sources of product information and current awareness and knowledge levels, and who makes purchasing decisions.

C. COMPETITORS

1. Who are potential center competitors?

List the competitors operating in the proposed center market areas, estimate their percentage of market penetration and dollar sales in that market, and estimate their potential loss of sales as a result of your entry into the market.

Competitor	Market Share	Estimated Sales	Sales Lost To You

2. How do you rate the competition?

Try to find out the strengths and weaknesses of each of these principal competitors. Then write your opinion of each, their principal products, facilities, marketing characteristics, and new product development of adaptability to changing market conditions.

Competitor	Strengths	Weaknesses

	Competitor A	Competitor B	Competitor C
	_____	_____	_____
Products	|___|___|___|	|___|___|___|	|___|___|___|
Facilities	|___|___|___|	|___|___|___|	|___|___|___|
Finances	|___|___|___|	|___|___|___|	|___|___|___|
Marketing Character	|___|___|___|	|___|___|___|	|___|___|___|
Market Adaptability	|___|___|___|	|___|___|___|	|___|___|___|
Product/Service Delivery Skills	|___|___|___|	|___|___|___|	|___|___|___|

\| WEAK \| AVERAGE \| STRONG \|

Have any of your competitors recently closed operations or have they withdrawn from your market areas? Give reasons for withdrawal.

_____
_____
_____
_____
_____
_____
_____

3. Advantages over competitors.

On what basis will the center be able to capture your projected share of the market? Analyze each characteristic. For example, a higher price may not be a disadvantage if the product is of higher quality than your competitor's. You will make a more detailed analysis than is presented here when a marketing strategy is developed.

CHARACTERISTICS	PRODUCTS ONE	TWO	THREE	FOUR
Price				
Performance				
Durability				
Versatility				
Speed or accuracy				
Ease of operation				
Ease of maintenance				
Record of repair				
Ease & cost to install				
Size or weight				
Styling				
Other characteristics				

What, if anything, is unique about the center's approach to the provision of its services in your market area?

4. What are the anticipated reactions and/or retaliatory moves of competitors?

D. MACROENVIRONMENT

1. How will the center provide its services to the community?

2. What will this method of distribution cost you?

3. Do you plan to use special marketing, sales, or merchandising techniques?

4. List your current customers by name, the total dollar amount they buy from you, and the amount they spend for each of your products.

Customer	% of Sales	Service	Volume

5. List your targeted customers in the same manner.

Customer	% of Sales	Service	Volume

Profile the Services to be Offered - Now the committee's task is to provide top management with a detailed profile of each objective they have been directed to review. To develop a profile, the committee writes a detailed report of each population and service area. This entails describing in detail the data that were gathered during the preliminary marketing review with specific data about the product or service, possible competitors, and marketing opportunities.

Commit Resources to Center Establishment - After receiving the service profiles, the facility board must make a firm decision about the creation of a community vocational center. Up to this point, the investigation has simply speculated on populations that would be served, the services that would be provided, and the way in which the services would be provided.

Now, however, equipment, testing materials, and supplies must be purchased, a site obtained, staff hired and an organizational structure created. Thus, the board must now commit dollars to the creation of the community vocational center.

CHAPTER 4

Establishing the Center

Chapters 1 through 3 presented information on how to determine if the community vocational transition center is a viable concept for your community. The rest of this publication assumes that this study has been made and that at least some information is available on the populations to be served. This chapter presents suggestions on what assessment and other materials to purchase, and the organizational structure to be followed. The reader should note while this chapter describes the establishment of a complete center, the center can be established on a piece-meal basis. A facility may decide to start a transitional center by beginning with one service, such as evaluation or job matching. If that is successful, then the center can begin to establish other services.

Determining What is Needed

The first step is to determine what testing and program materials are needed for the center. This is partially dependent on two factors. First, the populations served by the center, and, second, the type of programs that are developed. It must be noted that this method assumes that each person within a specific category would receive the same services. While this may not be totally true, this assumption is made only for the purpose of estimating needed materials. The populations to be served should have been specified by the research in Chapter 3. For example, it is determined that 40% of the clients would be disabled workers, 20% welfare recipients, 15% juvenile offenders, 15% employment applicants, and 10% dislocated homemakers. It was also determined that an estimated 1,760 persons total would receive center services during the first year. The first calculation is to estimate the number of persons in each category:

Disabled Workers:	.40 X 1760 = 704
Welfare Recipients:	.20 X 1760 = 352
Juvenile Offenders:	.15 X 1760 = 264
Employment Applicants:	.15 X 1760 = 264
Dislocated Homemakers:	.10 X 1760 = 176
Total:	1,760

After these numbers have been estimated, the next step is to determine the most common services[1] (e.g., literacy assessment and physical demands) for the target populations. First the major target populations and the potential services are put into a matrix form (Figure 12). Next the most likely service combinations are determined. This determination is based on the requests of third party payees, personal knowledge of local conditions, and estimates on what the logical services to each specific population should be. For example, it was concluded that welfare recipients would require the following: literacy assessment, aptitudes/skills assessment, behaviors/habits assessment, job matching services, vocational and educational counseling, and job seeking skills. After the matrix is constructed, the estimated number of persons to receive the service is entered in the appropriate cells. For example, it was estimated that disabled workers would need vocational analysis assessment. It was also determined that the center would serve about 704 disabled workers. Therefore, 704 would be entered in appropriate cell. The rest of the cells in the matrix are completed in the same way.

Once all group estimates have been entered in Figure 12, the row and column totals are calculated. The total number of specific services (i.e. 8712 in Figure 12) is determined by adding the total rows; this is checked by adding the column totals. The resulting total is the number of specific service units to be provided to the estimated 1760 persons. These row estimates are then used to determine the number of specific materials.

The reader should note, however, that while this method provides estimates of the number of units of materials, it does not provide the center with specific names of materials or specific tests. For example, 1320 literacy tests or assessments are needed per year. Professional judgment and the recommendations given in Chapter 5 should be used.

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[1] The specific services are only mentioned here; they are described in detail in Chapters 5 and 6.

FIGURE 12

Example of Planning Matrix

Potential Services	Potential Populations: Disabled Workers (40%)	Welfare Recipients (20%)	Juvenile Offenders (15%)	Employment Applicants (15%)	Dislocated Homemakers (10%)	Total
Assessments						
Literacy	704	352	264			1320
Abilities/Skills	704	352	264			1320
Physical Demands	704			264		968
Interests			264		176	440
Behaviors/Habits		352	264	264		880
Voc. Analysis	704					704
Psychological				264		264
Packaged Complete				264	176	440
Referral & Placement						
Occupat. Explor.			264		176	440
Job Matching		352			176	528
Job Seeking Sks.		352	264			616
Voc. & Ed. Counsel.		352			176	528
Living Skills			264			264
Total	2816	2112	2112	792	880	8712

Testing Materials - Included in this classification are paper-and-pencil tests, apparatus tests, occupational information materials, and behavior rating forms. The following service areas will require materials: Literacy assessment, abilities/skills assessment, physical demands assessment, interests, behaviors/habits assessment, and psychological testing. When purchasing tests the user should consider several factors. First, the estimated literacy skills of the various client groups. One of the most common testing problems is that the reading level of many tests is too high for many clients. Therefore, the selection of tests with low reading levels or non-reading tests are generally recommended.

The second factor to be considered is ease of scoring. All tests, except individually administered psychological tests, should be able to be scored by trained clerical staff; this would reduce the cost of test scoring. Another scoring option to be considered is the use of computer scored tests. These offer the center a method for obtaining accurately scored tests, most of which come with a standard report. Krug (1984) reviewed several hundred tests and behavioral assessment instruments that can be computer scored. He has identified three major types of computer scoring services: mail-in, teleprocessing, and local. In mail-in services test answer sheets are mailed to a central scoring source; a report is returned via the mail. In teleprocessing test data are transmitted either electronically or verbally through telephone lines to a central source; the resulting report can be printed on the center's computer or a paper copy mailed to the center. Finally, local computer requires that software, computer, printer and some type of an answer sheet reader can be used within the facility.

Each of these services offers a trade off between expense and time. In most cases mail-in service is the cheapest because it does not require equipment or telephone charges. However, this must be balanced against turn around time, which in turn must be weighed with the need for quick information for reporting or counseling. The expense of teleprocessing and the expense of purchasing equipment for local scoring machinery should be carefully compared. Therefore, before deciding on specific tests (e.g. WRAT-R or MMPI) find out what type of, if any, scoring services are available and what the cost per test administered is.

The third consideration is the technical aspects of the test. Test manuals should be carefully read, preferably with a copy of Standards for Educational and Psychological Testing (AERC et al., 1985) in the other hand. The norm base should be considered. How recent was the test developed or renormed, does it have employed worker norms, what regional or local norms are available, are the sample(s) clearly described, and how similar are norm groups to the client groups served by the center are some of the questions to be asked. The manual should contain information on the various types of reliability coefficients estimated for the test; the standard error of measurement should also be given. The procedures used to determine reliability should be clearly described. The final and most important consideration is the validation evidence. Content-related, criterion related, and construct-related validation should be considered:

> An ideal validation includes several types of evidence, which span all three of the traditional categories. Other things being equal, more sources of evidence are better than fewer. However, the quality of the evidence is of primary importance, and a single line of solid evidence is preferable to numerous lines of evidence of questionable quality. Professional judgment should guide the decisions regarding the forms of evidence that are most necessary and feasible in light of the intended uses of the test and any likely alternatives to testing. (AERC et. al., 1985, p. 9)

In summary, when purchasing testing materials, consider the following factors: reading level, scoring requirements, norms, reliability, and several types of validity.

Assessment Systems - This publication defines an assessment system as a series of closely and carefully related tests, activities, and other measures that provide a profile of a person's major abilities and skills within a short time. These systems commonly present results in terms of a Worker Trait Profile or Worker Qualifications Profile; these are the standard U.S. Department of Labor job analysis variables, such

as Aptitudes and General Educational Development. The most common assessment systems are: Apticom, Career Evaluation Systems (CES), Microcomputer Evaluation and Screening Assessment (MESA) and System for Assessment and Group Evaluation (SAGE).[2] The center should have one of these systems in order to provide a rapid screening for clients who are considered to be within what can be broadly defined as the "normal range." For example, the MESA was designed for the middle 80% of the population. When considering a system, cost, length of administration, scoring options, and relation to job matching systems or other job listing procedures should be carefully weighed. Of primary importance, however, are the technical concerns with norms, reliability and validity discussed above. These are just as relevant for assessment systems as they are for paper-and-pencil tests.

Work Samples - Although the emphasis of the center is on tests and assessment systems, work samples are also needed to provide information on occupational exploration, and physical demands, as well as a catalyst for observing and recording client behaviors. Because the center's philosophy is definitely to obtain accurate data in as short of time as possible, the role of work samples is much less than it would be in a traditional evaluation program. The emphasis is also on individual work samples that can be administered in two hours or less and not on complete work sample systems, such as the JEVS and Micro-TOWER; this is necessary for program flexibility as well as cost containment. Individual work samples from the Vocational Evaluation System by Singer and the Prep Work Samples should be considered for occupational exploration. Several of the Valpar Component Work Samples should be considered for use in assessing physical demands. All three systems could be used for providing standard situations for behavior observation.

The specific name and number of work samples should be based on the needs of the program. Because most of the work samples considered above take about two hours, the center should consider purchasing more than one of the commonly used work samples. This would provide smoother client flow by reducing waits for a specific work sample. For example, if the Valpar 4, Upper Extremity Range of Motion, will be used to assess the Reach, Handle, Finger, and Feel physical demand for all clients, then the center may need two or three copies of this work sample. In these cases, a small group administration should be considered; this would have the additional advantage of reducing evaluator contact time, which would reduce the cost of the service.

Program Materials - These materials, such as workbooks, forms, and self-study exercises, will be needed primarily in the three referral and placement services: occupational exploration, job seeking skills, and independent living skills. Obviously, before ordering materials in bulk, obtain a review copy of each proposed product and critically review it. The center should not forget the possibility of using locally developed program materials. The use of non-print media (e.g., video taping of mock interviews) and computer software (e.g., CHOICES for occupational information) should also be considered.

Regardless of their source, program materials should meet several criteria. First, they should be easy to read and understand. Directions for exercises should be reviewed for content and reading level. Second, the programs should be designed for young adults and adults. Independent living programs need to fit adult needs and

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[2] These four systems are described and compared in detail in Vocational Assessment and Evaluation Systems: A Comparison.

goals. Almost all junior high school and many senior high school occupational exploration programs are not relevant for adults. Third, information must be relevant to the local area. Independent living programs must identify and refer to local sources. Occupational information must also be localized. While the national trends reported in the Occupational Outlook Handbook (U.S. Department of Labor, 1984) and other national resources are helpful for general career planning, state and local information providing current job growth areas and hiring patterns are critically important. This need for current, accurate, local occupational information is also shared with job matching services. Job seeking skills programs should be related to current hiring practices.

Computers - Computer hardware and software will be needed for some assessment batteries, possible test scoring, job matching systems, record keeping, and report writing. In order to offer fast service and reduce personnel costs, as many operations as possible should be automated. This is especially true of test scoring, record keeping, job matching, and report writing.

A confusingly wide variety of computers, monitors, printers, other equipment and programs are available today. As with any other major equipment, the center should first establish general specifications for the hardware and then list all of the intended uses for the computer(s) and related equipment. The following suggestions are offered as a guides in developing these specifications:

1. Purchase a system from a major manufacturer. Many of the off-brands will most likely fade from the market in the next few years. Some safe bets appear to be IBM, Apple, and Tandy. However, expect to pay more for an IBM than an IBM compatible. Closely related to the computer is the Disk Operating System (DOS) required to operate the programs. When purchasing a program make certain the DOS for your computer is fully compatible with your program needs.

2. Purchase a top quality printer. Consider that one of the center's major products will be assessment and other reports. In order for these to make a good impression, reports must be printed on a letter quality printer.

3. The size of the computer is another major consideration. The amount of random access memory (RAM) required for many programs has almost doubled in the last three or four years.[3] For example, the most common configuration for job matching systems in the original (1983) edition of A Comparison of Computerized Job Matching Systems was 64K with two disk drives; only one of the eight systems reviewed required an internal or external hard disk (Botterbusch, 1983a). By the time the second edition was published, most of the programs required a minimum of 128K RAM. Five of the 21 systems reviewed required a hard disk, and another three were on time sharing systems connected to a main frame. The most recent edition (4.2) of WordPerfect, one of the most popular and sophisticated word processing programs, requires a minimum of 256K, an increase of 128K over versions sold only three years ago. The point is that the purchase of

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[3] RAM capacity is given in number of kilobytes, almost always called K. One K contains 1024 bytes of information or storage space. For example, a 256K RAM holds 262,144 bytes.

a computer with sufficient RAM is an absolute necessity; it is better to have too much than not enough.

4. If the center is considering obtaining equipment for test scoring and interpretation, make certain that these equipment needs match the computer specifications.

5. There is an almost unending array of optional equipment for computers, some of which is even practical. If the center is planning to use a time sharing job matching system, a teleprocessing assessment system, a state occupational information system, or to access other computers within the facility, a modem is necessary. This is a device that enables the computer to link with other computers through the use of a telephone line.

Furniture and Equipment

After the center has decided what tests, assessment systems, work samples, program materials, and computer equipment to purchase, it next needs to buy office furniture and equipment. Because the center will be operating as a business, the furniture and, to some degree equipment, should reflect the image of a successful enterprise. Therefore, furnishings should be fairly conservative in design and tone, and functional in use. Above all avoid the use of second hand or mismatched furniture. Once the general tone of the furniture has been determined, the next step is to decide what is needed.

When selecting furniture, the size and composition of the staff are the most important concerns. Each professional staff needs at least the following: full-sized desk with appropriate chair, two additional chairs for clients, small book case, one filing cabinet. If professional staff have access to a computer, a separate table is needed for the computer and printer. Clerical staff will need a desk with attached typewriter work area, several chairs, and appropriate filing cabinets. Computer equipment will require special desks or tables. Because of the need to maintain confidentiality, locking file cabinets are required for client records and testing materials.

The furniture for the assessment and training areas requires careful consideration. Large standard height work tables are needed for paper-and-pencil testing and related activities. Chairs should be comfortable and without arms. The training areas used for job seeking skills and independent living skills will require tables that can be arranged in a semi-circle. If sufficient funding is available, trapezoid shaped tables that form a semicircle would be best. The center must also contain some tables, etc. that can be raised to accommodate wheel chairs or lowered for other physical disabilities. Testing and training areas or rooms will require numerous filing and storage cabinets. Open racks for occupational information literature and other information would also be useful.

If space permits, there should be a waiting or lounge area for clients between assessments and training sessions. This area should contain comfortable, sturdy chairs and/or couches. A few work tables with appropriate chairs would be a good addition. Similar furniture could be used in a small reception area.

In addition to furniture, equipment will be needed. The most expensive items, computers and work samples, have already been discussed above. Regardless of the computer support, the center will need a typewriter for each clerical person; these

will be used for tasks too small to be done efficiently on the computer. The next major piece of equipment to be considered is a copy machine. A small table top machine that can copy either from single pages, such as a report, or from books should be sufficient. The telephone system is a separate consideration. There should be an extension for each staff person. Because of the wide variety of telephones and systems available throughout the U.S., it is beyond the scope of this publication to offer specific directions. In summary, furniture and equipment should reflect the image of the center, be comfortable, and durable.

Organizational Structure and Staffing

This section discusses a method for estimating the number of staff needed to operate the transitional center and the qualifications of these staff.

Estimating the Number of Direct Service Professional Staff - The number of staff needed will depend on the average length of each program in hours, the number of clients in various programs, and the client to staff ratio for the various services. Figure 13 contains an example of one way of estimating staff needs. The first column contains the services offered by the center. The second column contains the estimated number of hours that the average client would take to complete the tests, assessments, and activities. These estimates were based on the personal experience of the senior author, and the average amount of time needed to complete standard tests, etc. The third column is the total estimated number of persons who will be served in one year. These numbers were taken from the last column on Figure 12. The total contact hours (column four) are calculated by multiplying the estimated program hours by the total estimated number of persons (e.g., literacy total hours of contact 2640 = 2 X 1320).

Because the clients will only be at the center for a short time, it is important that staff obtain as much as information about each client as possible. This implies a lower client to staff ratio than would usually be found in traditional vocational evaluation programs. In the programs outlined in Chapter 5, it is assumed that a 4:1 client to evaluator ratio will be needed for assessment services except vocational analysis and psychological assessment. These two services are individual in nature. Vocational analysis requires a review of medical records and an interview, both of which must be done individually. Psychological assessment consists mostly of individual assessments, such as the WAIS or Bender Gestalt. Because this assessment service would have to be performed by a licensed psychologist, it will not be included in the remainder of these calculations.

The referral and placement services assume three different client to staff ratios. Occupational exploration is seen as a group activity with a client/staff ratio of 4:1. The two teaching services, job seeking skills and living skills, assume a small group instructional approach in which material is presented to the group and then individual help is given as needed. Because data entry, data base searching times, and report printing times usually take an hour of counselor time, the job matching service is considered an individual service. Finally, vocational and education counseling is an individual effort. These ratios are listed in the fifth column on Figure 13.

FIGURE 13

Example of Estimating Total Staff Contact Hours

Potential Services	Estimated Hours	Total Clients	Total Hours of Contact	Client/Staff Ratio	Total Staff Hours
Assessments					
Literacy	2	1320	2640	4:1	660
Ability/Skill	4	1320	5280	4:1	1320
Physical Dem.	2	968	1936	4:1	484
Interests	2	440	880	4:1	220
Behav/habits	5	880	4400	4:1	1100
Voc. Analy.	5	704	3520	1:1	3520
Psychological	4	264	1056	1:1	(1056)
Packaged	3	440	1320	4:1	330
		Total Staff Hours for Assessment:			7634
Referral & Place					
Occ. Explor.	6	440	2640	4:1	660
Job Matching	1	528	528	1:1	528
Job Seek. Sks.	12	616	7392	6:1	1232
Voc.& Ed. Coun.	3	528	1584	1:1	1584
Living Skill.	16	264	4224	6:1	704
		Total Staff Hours for Referral & Placement:			12,342

The total staff hours, the final column of Figure 13, is determined by dividing the total hours of contact by the client/staff ratio. For example, the total staff hours for literacy assessment equals: 2640/4 = 660. The total staff hours for the assessment services are 7634. Because psychological assessment requires a certified psychologist and not an evaluator, these hours are not included in this total. The total staff hours for the referral and placement services are 12,342. The total estimated staff hours needed to serve the estimated 1760 clients per year (Figure 12) is 19,976 (7634 + 12,342 = 19,976).

The total number of professional staff are based on the estimated total staff hours in both services. To complete the estimated number of professional staff, several additional factors must be considered. There are duties that cannot be assigned to direct contact hours. These include report writing, materials preparation, miscellaneous duties (e.g., staff meetings, general correspondence, and maintaining contact with referral sources) and professional time (e.g., in-service training and professional reading). The professional time is needed for staff to keep current with their profession and to help to prevent burnout. The estimated percentages of these duties must be added to the total number of staff contact hours.

The method chosen to account for these other duties was to take a percentage of the total staff hours for each duty and then add these to the total staff hours. Because different job duties were perceived for the assessment and referral and placement services, two separate estimates were developed. Additional duties for the assessment service were: report writing (20%), miscellaneous duties (10%), and professional time (5%). These estimated 20% for report writing comes from subjective impressions of the amount of time spent by evaluators in report preparation. Likewise, the percentages for miscellaneous duties and professional time are also subjective estimates. The hours involved in these additional duties were calculated as follows:

Total Staff Contact Hours for Assessment:	7634.0
20% for report writing (.20 X 7634 = 1526.8):	+1526.8
10% for miscellaneous (.10 X 7634 = 763.4):	+ 763.4
5% for professional time (.05 X 7634 = 381.7):	+ 381.7
Total Staff Hours per Year:	10,305.9

These total staff contact hours and the estimated hours for the three other duties are added to from the total staff hours per year.

There were some different job duties for referral and placement services. Because the specific services offered here required less report writing, a 10% adjustment factor for report writing was considered sufficient. Because these programs commonly require significant materials preparation and modification, they were considered to take up 10% of the time. The estimates for miscellaneous duties and professional time were the same as the assessment services. The total staff hours per year were calculated as follows:

Total Staff Contact Hours for Referral and Placement:	4708.0
10% for reporting writing (.10 X 4708 = 470.8)	+ 470.8
10% for materials preparation (.10 X 4708 = 470.8)	+ 470.8
10% miscellaneous duties (.10 X 4708 - 470.8)	+ 470.8
5% for professional time (.05 X 4708.8 = 235.4)	+ 235.4
Total Staff Hours per Year:	6355.8

In summary, if the estimates of the number of clients to be served each year and if the assumptions of the services provided are accurate, then, in this example, the transition center will need 10,305.9 direct service provision and other hours to provide services. It will also need 6355.8 hours for referral and adjustment services. The reader should note that the calculations below assume a constant and consistent flow of clients.

These total hours can be divided by the number of working hours in a year to provide some estimates of professional staff size. Assuming a 40 hour week, a person

with no time off would work 2080 hours in a year (52 weeks). From this number of hours, 80 hours is subtracted for vacation and 40 hours for illness. The average number of hours worked per year becomes:

2080 total hours per year
- 80 vacation
- 40 illness
1960 hours worked per year

The total staff hours per year for each of the two broad service categories are divided by the number of hours worked per year to find the estimated number of full-time equivalent (FTE) positions:

Assessment Services: $\frac{10,305.9}{1960} = 5.26$

Referral & Placement: $\frac{6355.8}{1960} = 3.24$

In conclusion, in order to provide a minimum of direct service staff, the assessment services would require 5.26 professional FTE's, and the referral and placement would require 3.24 FTE's. It should also be recalled that this does not include the time needed for psychological assessment, an estimated 1056 hours; this would best be provided by hiring a psychologist on a consulting basis. Now that the direct service professional staff have been determined, we will now consider the structure of the organization.

Other Professional Positions - We will begin with the two general types of programs and build the other professional positions on these. The assessment services require 5.26 FTE's; the referral and placement services require 3.24 FTE's. The problem becomes what to do with the .26 and .24 FTE's. One solution to this problem is to add about .75 FTE to each number for a part-time unit supervisor. In other words, the assessment section would have five evaluators and one chief evaluator whose duties would be divided between providing direct client services and supervision. For the referral and placement services, there would be three staff and one supervisor whose duties would also be divided between supervision and service provision. Some of the duties of these two unit supervisors would be scheduling for client's and staff, providing technical advice, and assuring quality services.

A full-time director would be required. This person would be responsible for the daily operation of the center and would assist higher level management in deciding general policy. He/She would also be responsible for budget and expenditures. Depending on the size and structure of the sponsoring rehabilitation facility, the transition center may require a full or part-time outreach person. The major job duty of this person would be to actively seek out referrals from private and public sources.

Clerical Staff - Clerical staff would be required to perform a wide variety of duties to maintain and improve the functioning of the center. Maintaining client records, communication with clients and third party payees, report preparation, routine test scoring, assisting in scheduling clients, and bookkeeping would be the major functions.

Organization and Staff

This section is intended to provide general information on some possible organizational structures and the major job duties required of each position. The final part will provide some general guidelines on recruiting.

Organizational Structure - The next step is to decide on the organizational structure. This is largely dependent on the size of the transitional center and on the involvement of the overall sponsoring center. The example in this publication assumes an organization based on six evaluators and four referral and placement specialists[4]. This is in turn based on a high number of referrals per year. It assumes two part-time unit supervisors and one center director. Because of the importance of maintaining contact with the community, a full-time outreach person would also be required. The part-time psychologist would be used on a consulting basis. Finally, clerical staff would be under the direction of an office manager. This model is also based on the assumption that the center operates as an autonomous unit, receiving only general guidance from the sponsoring facility. The organization chart for this hypothetical center is found in Figure 14.

The reader will note that even though the term "placement" is used in the title for one of the units, the center does not perform placement per se. Because placement services are time consuming and because the amount of time required to place a client cannot be predicted, the model given above assumes that the center would not provide direct placement services. However, there would be no reason why this service could not be provided directly by the transition center.

A smaller center would not require the part-time unit supervisors. The evaluators and referral and placement specialists would report to the center director. One of the professional staff, most likely the director, would act as the outreach person. A very small center would require several direct service providers. Because small size usually means an increased number of job duties, staff in a small transition center would have to be very well trained in several areas and come from diverse backgrounds. Such a center is seen as operating with three or four professionals, one of whom acts as part-time supervisor, and one or two clerical staff.

Regardless of the size of the community vocational transition center, it must be remembered that the center is seen as a part of a larger organization, most commonly a rehabilitation facility. The personnel policies for hiring, retention, work loads, chances for advancement, leave time, and salary schedules would have to be consistent with the sponsoring organization (see Gilbertson, 1981). In terms of organizational charts, the director of the center is seen as reporting to the middle management in a larger facility, such as the director of rehabilitation services; in a small facility the center director could report to the executive director of the facility.

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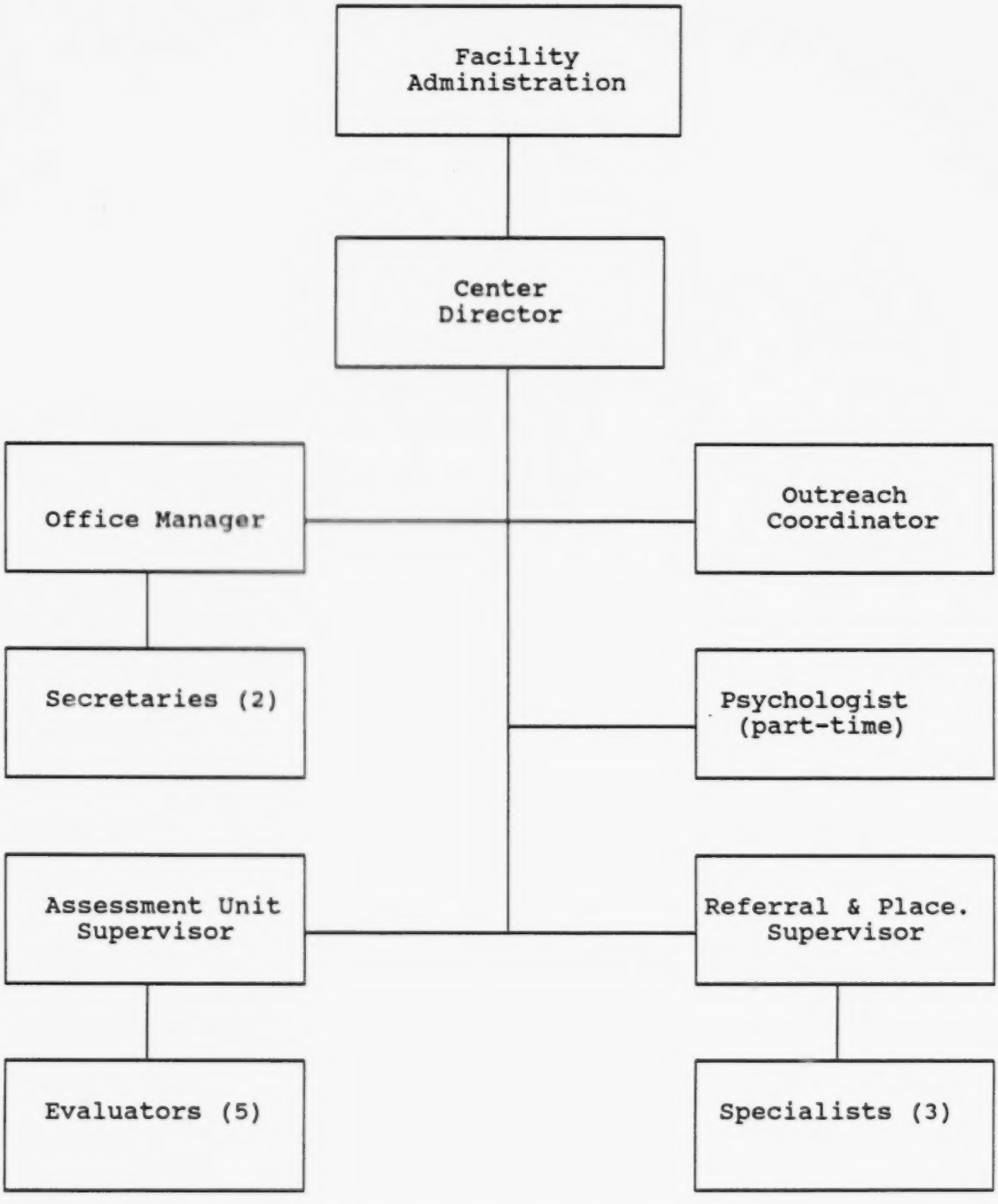
[4] We are aware that the size of this center is perhaps unrealistically high for a beginning transitional center. This size was chosen so that several position descriptions could be introduced. If your center is smaller, the duties of several positions could be combined.

FIGURE 14

Hypothetical Community Transitional Center Organization Chart



Position Descriptions - Once the size of the center and the organizational structure are decided, the next stage is to develop position descriptions for each professional and clerical position. Since the center is part of a larger facility, all positions should be written in the same format as the rest of the facility. Ideally, each position should contain a summary of the job, the qualifications required, and the specific tasks to be performed. With some professional and managerial jobs, the job duties are often written in terms of responsibilities; first line professional and other jobs (e.g., clerical) descriptions are written as task statements (U.S. Department of Labor, 1982a). Sample job descriptions that match the positions given on Figures 15 to 23 are presented at the end of this chapter on the next several pages. These are intended to be used as a basis for developing "real" job descriptions.

Recruiting - Before recruiting begins, the sponsoring facility should first determine the number of staff to be hired and general duties that each will be expected to perform. These, of course, will be dependent on the findings of the market research. Once the number and general duties of the staff to be hired are determined, the next step is to decide on a salary range for each position. This range should be based on two considerations:

1. The amount presently being paid by the sponsoring facility for identical or similar jobs. For example, a work adjustment specialist position would be very close to the anticipated position of Referral and Placement Specialist. The clerical and evaluator positions could also fall under this category. To establish different pay structures for the center from the rest of the facility would be to invite the resentment of present staff.

2. If the sponsoring facility does not have similar positions or if they decide to use different pay scales, salary ranges should be dependent on the prevailing wages for vocational rehabilitation professionals in the same geographical area as the center. An informal wage survey could be performed to determine this.

Once the position descriptions and the salary ranges have been determined, announcement of the positions is the next step. The facility would want to follow affirmative action guidelines, and widely advertise the professional positions. Some possible ways for announcing the positions are as follows:

1. Advertisements in professional journals, such as the Journal of Rehabilitation and the Vocational Evaluation and Work Adjustment Bulletin.

2. Announcing the vacancies in professional employment exchanges, such as the Vocational Evaluation and Work Adjustment Employment Exchange and the listings in the APA Monitor.

3. Mailing position notices to graduate schools having programs in the areas of interest.

4. If in a large urban area, advertising in local newspapers and with the Job Service could be useful.

Regardless of the media and methods used, present facility staff should be formally notified of the position possibilities. Each journal or newsletter announcement should contain a brief statement of the major duties and responsibilities, the person to contact, what is required to make formal application (e.g. vita and letters of refer-

ence), and general information on salary range and other benefits. If the center positions are being recruited for nationally, a brief description of the parent facility and the geographical area may be beneficial. Announcements for entry level professional positions should be sent to graduate schools with programs in the relevant areas. All direct program staff should be certified either as Vocational Evaluation Specialist (CVE) or Work Adjustment Specialist (CWA) by the Commission on Certification of Work Adjustment and Vocational Evaluation Specialists (CCWAVES).

The first person hired should be the director. The second one hired should be the office manager. He/She would have as one of his/her first responsibilities the continued recruitment and hiring of the rest of the professional and clerical staff. Because the director will be responsible for the center, he/she should be responsible for staff selection.

Rather than hiring the entire staff at one time, the center could start with a smaller staff and then gradually increase staff as needed.

FIGURE 15

Position Description for Community Vocational Transition Center

DIRECTOR

Job Summary - Responsible for direct management and control of transition center.

Reports To - Management of parent facility.

Qualifications - Master's degree in facility management, rehabilitation counseling, vocational evaluation, or related area. At least two years of experience in management of vocational rehabilitation unit.

Specific Job Duties

1. Provides direct and indirect supervision to staff: Provides direct supervision to Office Manager, Psychologist, Outreach Coordinator, and Unit Supervisors. Provides indirect supervision for program evaluation system. Provides second-line supervision to Evaluators and Specialists. In coordination with staff, prepares individual performance contracts and/or other personnel management tools. Reviews staff performance periodically and makes suggestions for improvement and changes. Responsible for enforcing overall facility personnel policies. Approves vacation and working hours.

2. Responsible for financial management: With assistance of Outreach Coordinator, negotiates service contracts with third party payees. With assistance of Office Manager, reviews monthly financial reports. Approves requests for equipment and supplies. With staff assistance, prepares annual budget. Prepares financial reports at specified times. Reports financial condition to facility administration.

3. Assists staff as needed: Assists Outreach coordinator in making contact with clients and third party payees. Assists Unit Supervisors, evaluators, and specialists during rush times.

4. Communicates with and reports to management: Periodically meets with management to report activities and conditions at center. Assists management to plan new directions for center. Coordinates center activities with mission and objectives of entire facility.

5. Performs miscellaneous duties: Meets with visitors to explain functions of center. Communicates about center through community organizations, public speaking, and media. Meets with clients as required.

FIGURE 16

Position Description for Community Vocational Transition Center

OUTREACH COORDINATOR

Job Summary - Contacts clients and third party payees in order to obtain clients for the center.

Reports To - Director

Qualifications - BA/BS degree in human services, social sciences (e.g., psychology, social work) or marketing. At least three years of demonstrated experience in dealing effectively with persons in a variety of selling situations. Must be able work with little supervision. Must be able to effectively communicate verbally and in writing.

Specific Job Duties

1. Searches for possible sources of clients: Reviews information, such as newspapers, chamber of commerce information, legal requirements, and business newsletter, in order to obtain possible third party payees.

2. Solicits third party payees: Writes or telephones potential third party payees. Meets with business, education, corrections, employers, insurance companies, attorneys, vocational rehabilitation and other potential referral sources and informs them about center. Describes center's services and explains how the center can assist with assessment and referral services. Relates these services to customer's needs. Discusses reporting requirements. Begins initial negotiations on fees and number of clients.

3. Maintains contact with third party payees: With Unit Supervisors reviews services provided and reports to determine if customer's needs are being met. Checks with customers and determines if needs are being met. Suggests changes in services and/or reporting to Director to meet third party payee's needs.

4. Develops marketing plan: Using knowledge of community and center's resources, plans for marketing center's services. Uses a variety of media to present center to community. Prepares talks for groups of interested persons. Prepares advertising for print and nonprint media.

FIGURE 17

Position Description for Community Vocational Transition Center

PSYCHOLOGIST

Job Summary - Provides individual psychological testing and other assessments to clients on a part-time consulting basis.

Reports To - Director

Qualifications - Ph.D. or Ed.D. in clinical psychology from an American Psychological Association approved program. Must be licensed to practice in state in which facility operates.

Specific Job Duties

1. Administers, scores and interprets individually administered tests: Selects test best suited to obtain needed information for client. Greets client and explains purpose of testing. Administers test according to respective manual. Scores and interprets test.

2. Interviews and diagnoses clients: Discusses educational, vocational and other problems with client and relates this to client's personal needs, and personality. Using testing, interview and other information, makes diagnosis according to DMS-3.

3. Refers clients: If client is seen as having personal, emotional, or psychological problems would interfere with employment and/or training, refers client to other community programs. Prepares written referrals. Informs third party of need for referral and reasons why.

4. Prepares reports: Prepares written reports and letters giving the results of testing, diagnosis, impressions, and other information.

FIGURE 18

Position Description for Community Vocational Transition Center

OFFICE MANAGER

Job Summary - Manages and provides clerical and bookkeeping services for center.

Reports To - Director

Qualifications - High school graduate with knowledge of bookkeeping systems, word processing, and office procedure. Three to 5 years of experience.

Specific Job Duties

1. Provides direct supervision to two Secretaries: Coordinates work loads to ensure even distribution of work. Assigns duties and specific work, such as reports and correspondence, to Secretaries. Reviews work completed by Secretaries as needed. Conducts annual performance evaluation of Secretaries.

2. Keeps center financial records using computer program in accordance with facility policies: Enters monies received into program. Prepares statements for clients or third party payers based on services provided by center. Pays routine invoices. Calculates monthly payroll. With assistance of Director, prepares monthly financial report. Prepares purchase order for supplies and equipment.

3. Maintains personnel and client records: Keeps and updates confidential personnel records for all persons employed in center. Maintains master file of client reports and records. Responsible for security of all records.

4. Performs other duties as needed: Maintains inventory of equipment and furniture. Assists Secretaries to review, type, print, and proofread correspondence and client reports. Schedules client services. Answers telephone calls. Receives clients and visitors and directs them to proper staff person.

FIGURE 19

Position Description for Community Vocational Transition Center

SECRETARY

Job Summary - Performs typing, filing, and other routine clerical duties.

Reports To - Office Manager

Qualifications - High school graduate. Ability to type 50 words per minute. Proof-reading ability. Knowledge of or ability to learn word processing and report writing computer programs.

Specific Job Duties

1. Types client reports: Using computer and word processing programs reviews, types, and spell checks assessment and referral and placement reports. Proofreads reports and asks report writer about unclear language, missing words, etc. Prints report.

2. Prepares routine correspondence: Using computer and word processing equipment prepares draft and final copies of letters for all professional staff.

3. Files reports and other documents: Files client reports, medical records and other documents according to center system, through use of a case number or client's social security number.

4. Receives incoming telephone calls: Answers telephone, identifies center to caller. Listens to caller's request and either transfers caller to appropriate staff or answers question him/herself. Takes messages for staff not present at time of call.

5. Performs miscellaneous duties: Escorts visitors and clients to appropriate area of center. Types travel reports. Schedules meetings. Sorts and delivers incoming mail. Weighs and stamps outgoing mail. Maintains center library.

FIGURE 20

Position Description for Community Vocational Transition Center

ASSESSMENT UNIT SUPERVISOR

Job Summary - Directs Evaluators and provides direct client assessment services.

Reports To - Director

Qualifications - Master's degree in vocational evaluation or closely related field. Two to three years experience as evaluator working with a variety of disabilities. Ability to communicate clearly orally and in writing.

Specific Job Duties

1. Responsible for assessment unit: Directly supervises evaluators and assists with planning and report writing. Determines staff leaves and work loads. Fills in for staff as needed. Conducts annual performance evaluation of staff.

2. Maintains program evaluation procedures for Assessment Unit: In cooperation with staff and Director, develops program evaluation procedures, collects data or assigns staff to this task, maintains data, and performs routine statistical analyses of data. In cooperation with Director and staff, suggests improvements and changes in assessment programs.

3. Performs duties of Evaluator, as indicated on Evaluator position description.

FIGURE 21

Position Description for Community Vocational Transition Center

EVALUATOR

Job Summary - Interviews clients, administers a variety of standardized assessment techniques to clients, and prepares standardized reports.

Reports To - Assessment Unit Supervisor

Qualifications - Master's degree in vocational evaluation or closely related field. Ability to communicate clearly orally and in writing. Ability to work closely with persons with all degrees and types of disabilities.

Specific Job Duties

1. Reviews medical, psychological, educational, vocational, and other relevant information about clients: Critically reads all records provided by client or referring source. Matches apparent needs of referral source with needs as determined by review of client file. May communicate with referring source for additional information.

2. Decides on specific instruments to be administered to client: Within framework of purchased assessment(s), selects most appropriate test, work sample, etc. for client. Uses knowledge of specific instruments and client needs to make decision.

3. Administers and scores assessment instruments: Explains to client the purpose and reason for administering a specific instrument. Administers tests, work samples, etc. according to instructions in their respective manuals. May modify instructions to meet needs of individual clients. Observes and questions clients to determine if they understand task to be performed. Records behavior observations as needed. Hand scores or machine scores tests, work samples, etc. Records relevant information in client file.

4. Interviews and provides information to clients: Conducts formal or informal interview of client to obtain needed information and to make vocational decisions. Questions client about relevant past history. Records information as needed. Explains assessment process to client. Informs client of results of assessment instruments. Explains meaning of these results and how they relate to client's reasons for referral.

5. Prepares reports: Reviews all information collected about client to prepare for report writing. Synthesizes all information obtained and in file to prepare short report, using standardized format. Dictates, writes, or types into word processor draft copy of report. Provides specific recommendations for future action in each report. May give draft copy to Assessment Unit Supervisor for review.

FIGURE 21 (continued)

6. Performs miscellaneous duties: Attends staff meetings. Communicates with clients and referral sources. Provides advice on management decisions. Keeps current on professional literature.

FIGURE 22

Position Description for Community Vocational Transition Center

REFERRAL AND PLACEMENT UNIT SUPERVISOR

Job Summary - Directs Specialists and provides direct client referral and placement services.

Reports To - Director

Qualifications - Master's degree in work adjustment, placement, rehabilitation counseling or closely related field. Two to three years experience as a direct service provider working with a variety of disabilities. Ability to communicate clearly orally and in writing.

Specific Job Duties

1. Responsible for Referral and Placement Unit: Directly supervises Specialists and assists with planning and report writing. Determines staff leaves and work loads. Fills in for staff as needed. Conducts annual performance evaluation of staff.

2. Maintains program evaluation procedures for Referral and Placement Unit: In cooperation with staff and Director, develops program evaluation procedures, collects data or assigns staff to this task, maintains data, and performs routine statistical analyses of data. In cooperation with Director and staff, suggests improvements and changes in programs.

3. Performs duties of Specialist as indicated on Specialist position description.

FIGURE 23

Position Description for Community Vocational Transition Center

SPECIALIST

Job Summary - Provides direct client services in the areas occupational exploration, job matching and seeking skills, counseling, and independent living skills.

Reports To - Referral and Placement Unit Supervisor

Qualifications - Master's degree in work adjustment, placement, rehabilitation counseling or closely related field. Ability to communicate clearly orally and in writing. Ability to modify materials for local use.

Specific Job Duties

1. Instructs clients in job seeking skills and independent living skills: Assesses present level of functioning and adjusts material presented in accordance to needs. Uses lecture, discussion, media, guided exercises, role playing and other methods to present materials in organized manner. Reviews written exercises. Provides feedback to clients as required.

2. Provides job matching services: Enters client profile into computer. Modifies profile as needed. Searches data base(s) to determine availability of jobs in local labor market. May determine the availability of training programs. Discusses results with client.

3. Provides occupational exploration services: Determines client's present interests either from test results or interview. Relates interests to local labor market and training programs. Helps client select print or non-print materials in areas of interest. Assists client with selection and use as required.

4. Offers vocational and educational counseling: Conducts group or individual counseling sessions to assist clients in clarifying their values, needs, and interests. Provides methods and models for deciding on specific careers and/or jobs. Refers clients to other programs as needed.

5. Prepares reports: Reviews all information collected about client to prepare for report writing. Synthesizes all information obtained and in file to prepare short report, using standardized format. Dictates, writes, or types into word processor draft copy of report. Provides specific recommendations for future action in each report. May give draft copy to Referral and Placement Unit Supervisor for review.

6. Performs miscellaneous duties: Attends staff meetings. Communicates with clients and referral sources. Provides advice on management decisions. Keeps current on professional literature.

CHAPTER 5

Assessment Services

The community vocational transition center functions by developing several highly specific, standardized services that can be offered to a wide range of customers. Because the fee for each service is partially dependent on the amount of time required and because each service uses standardized tests and work samples, these services are seen as being time specific. For example, literacy assessment is designed to take an estimated two hours regardless of the tests used. Each of these services can be used as a building block in the construction of several service programs aimed at specific groups. The goal of many of these programs is to provide an assessment of the standardized variables needed to develop a Worker Trait Profile.

This chapter describes eight specific assessment services that can be offered to clients. The next chapter describes referral and placement services. These assessment and referral and placement services were selected on the basis of perceived need.

Many of the assessment services are organized around the need to measure the client's present level of functioning that can be used in job matching, occupational exploration, and counseling. Although capable of providing useful and often necessary additional information, four assessment services lead directly to the variables needed for the Worker Trait Profile: (1) Literacy Assessment - Reasoning, Mathematics and Language in General Educational Development, (2) Abilities/Skills Assessment - the 11 Aptitudes: General Learning Ability, Verbal Aptitude, Numerical Aptitude, Spatial Perception, Form Perception, Clerical Perception, Motor Coordination, Finger Dexterity, Manual Dexterity, Eye-Hand-Foot Coordination, and Color Perception, (3) Physical Demands Assessment - Strength, Climbing/Balancing, Stooping/Kneeling/-Crouching and Crawling, Reaching/Handling/Fingering and Feeling, Talking/Hearing, and Seeing, (4) Interest Assessment - The 12 Guide for Occupational Exploration interests: Artistic, Scientific, Plants and Animals, Protective, Mechanical, Industrial, Business Detail, Selling, Accommodating, Humanitarian, Leading Influencing, and Physical Performing. If only a rough screening is needed, the Packaged Complete Assessment service offers measures in most or all of the above variables.

The need for Work Behaviors/Habits Assessment in based on Rodhouse (1977), who found that most persons get fired because of poor work or personal habits than

because of defects in work skills. This service would provide an initial screening of the client's vocational behaviors.

Although the above assessment services can be done mostly in a group, the Vocational Analysis and Psychological Assessment services are more individualized. In Vocational Analysis the evaluator combines present information about the client and uses transferable skills analysis to determine his/her current vocational functioning level. This service is closely related to legal disability determination. Psychological Assessment provides a general picture of the client's intellectual and emotional functioning.

The rest of this chapter will provide several different assessment devices capable of providing identical or similar information. We have made a deliberate decision not to recommend only one test or work sample. This decision is based on the assumption that each transitional center will reflect local needs, ideas, experiences, as well as the competencies of the professional staff. The intent is, rather, to offer several alternatives one or more of which should provide accurate information in a short time[5].

Literacy Assessment

Language and Mathematics Assessment - The purpose of literacy assessment is to provide a basic measure of the client's reading level and comprehension of the English language. In some cases, spelling skills will also be assessed. Because reading comprehension is required before manuals, textbooks, training materials, and other instructional materials can be understood, it is the most important factor. Basic literacy is required before the content of many occupations can be learned in an effective manner or at all. The clients arithmetic "literacy" must also be determined. In the tests mentioned below, the reading comprehension score should be used to find the Language level of General Educational Development (GED).

Literacy assessment is directly related to the Language and Mathematics scales of General Educational Development (GED). Commonly, reading and mathematical skills are translated into grade equivalents or General Educational Development (GED) levels. Some useful tests for determining literacy are:

1. Adult Basic Learning Examination (ABLE)

   Purpose - This test is designed to assess the level of educational achievement among adults. Level I assesses the achievement of adults from first grade to fourth; Level II, fifth to eighth, and Level III ninth to twelfth. The test measures vocabulary, reading, spelling, computation, problem solving and total.

   Times - About 150 minutes, group administered. Hand scored in 30 minutes.

   Recommended Client Group - All adults over 17

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[5] Most of the tests and work samples discussed in this publication were taken from the following sources: Testing and Test Modification in Vocational Evaluation, A Counselor's Guide to Vocational Guidance Instruments, Vocational Assessment and Evaluation Instruments: A Comparison, Tests, Test Critiques (Vols. I to IV), and Measuring Worker Traits.

Conversion to GED - Convert Total arithmetic grade equivalent score to GED Mathematics level 1 through 4. Use the Reading score grade equivalent score for GED Language level 1 through 4.

Available from - The Psychological Corporation

2. Peabody Individual Achievement Test (PIAT)

Purpose - A wide range screening instrument, the PIAT is especially useful in determining an individual's scholastic attainment. The test measures mathematics, reading recognition, reading comprehension, spelling and general information.

Times - Untimed, individually given, takes about 40 minutes. Hand scored in about 15 minutes.

Recommended Client Group - All ages. Also suitable for mentally retarded, cerebral palsy, and psychiatric populations.

Conversion to GED - Convert Mathematics and Reading Comprehension scores to GED Mathematics and Language levels of 1 through 5.

Available from - American Guidance Service

3. Tests of Adult Basic Education Form 3 (TABE)

Purpose - Measures achievement in reading, mathematics, and language. A brief screening device is administered first. Based on the results of this locator test, one of the three levels is administered: E (grades 2.5 to 4.9), M (grades 4.5 to 6.9), and D (grades 6.5 to 8.9).

Times - The screening (i.e., locator test) should take about 15 to 20 minutes. The time in minutes for each level is as follows: Level E - 127 minutes, Level M - 209 minutes, and Level D - 191 minutes. Group administered. Hand scored in about 15 minutes.

Recommended Client Group - Adults, including mentally retarded persons, with moderate literacy skills.

Conversion to GED - The Total Reading consists of vocabulary and comprehension. Total Mathematics consists of computation and applying concepts. Convert these to grade equivalents and use them for the GED Language and Mathematics scales.

Available from - CTB/McGraw-Hill

4. Wide Range Achievement Test-Revised Level 2 (WRAT-R)

Purpose - The WRAT-R is intended to measure basic skills in reading, spelling and arithmetic.

Times - Average administrative time is 30 minutes, group administered. Hand scored in 10 minutes.

Recommended Client Group - Children through adults to age 74. Useful in present form for mentally retarded. Large print version available.

Conversion to GED - Use the grade equivalents on last page of Level 2 test sheet. The Arithmetic and Reading scores can range from GED Mathematics and Language levels 1 through 4, respectively.

Available from - Jastak Associates, Inc.

All of these suggested tests will provide the evaluator with estimates of client reading and mathematics grade equivalent scores. These grade equivalent scores can be roughly translated into one of the six GED levels for Mathematics and Language (Figure 24). The client's grade equivalent scores are determined according to the appropriate test manual. For example, a client has an eighth grade mathematics equivalent on the WRAT-R. These grade equivalents are then compared to the values in Figure 24. In this example, an eighth grade mathematics level would translate to a GED Mathematical Development rating of 2, which is defined as:

> Level 2 - Add, subtract, multiply, and divide all units of measure. Perform the four operations with common and decimal fractions. Compute ratio, rate, and percent. Draw and interpret bar graphs. Perform arithmetic operations involving all American monetary units. (U.S. Department of Labor, 1972, p. 211).[6]

One of the problems commonly encountered with the many standardized achievement tests is that they only test reading and/or mathematics skills to slightly beyond high school (i.e., GED level of 4). If college and post-college literacy levels need to be determined, the evaluator should consider more difficult tests like the Nelson-Denny Reading Test (Forms E and F), Reading Progress Scale: College Version, and Clarke Reading Self-Assessment Survey. Some possible tests for determining higher level mathematics (i.e., GED levels 5 and 6) are: Arithmetic and Math Split Form (Form M) and Cooperative Mathematics Test.[7]

Although tests are usually able to provide a reasonably accurate measure of literacy skills, the evaluator should compare test results with other factors, such as: literacy skills required for previous jobs, type of material read, if any, for enjoyment or self-instruction, and amount and type of formal education. This information could be obtained from client records and/or interview data.

Reasoning Assessment - Closely related to literacy assessment is the determination of Reasoning Development, the third factor in the GED. The assumption made by the U.S. Department of Labor's job analysis procedures is that some degree of reasoning is required for each job. Reasoning ranges from applying "common sense understanding to carry out simple one- or two-step instructions" (Level 1) to applying "principles of logical or scientific thinking to a wide range of intellectual and practical problems" (Level 6) (Botterbusch, 1983b, p. 104). If the center chooses to assess the client's reasoning level using the scale given on Figure 24 several approaches are available. In their research and critical analysis of the fourth edition of the

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[6] The reader should note that the newer A Guide to Job Analysis defines Mathematics Level 2 differently: "Use arithmetic to add, subtract, multiply, and divide whole numbers" (p. 230).

[7] All of these tests are briefly described in and Sweetland and Keyser's Tests (second edition).

FIGURE 24

General Education Development Levels and Approximate Grade Equivalents

GED Level	Approximate Grade Level	Formal Education and Experience
6	16 plus	Graduate degree--outstanding, creative accomplishment
5	15 to 16	Undergraduate degree--professional, administrative, artistic or civic accomplishment
4	12 to 14	High school graduation with college prep. courses or voc. tech. curriculum--successful work experience in organized work technology
3	10 to 11	High school education with less demanding curriculum--successful work experience requiring common sense understanding to solve problems.
2	4 to 9	Successful completion of elementary school and/or some high school--successful work experience involving standardized duties.
1	1 to 4	Completion of less than elementary school--can read safety signs, follow simple directions, make change.

Note: Levels 5 and 6 on the Language Development scale are identical, using the Handbook for Analyzing Jobs classification table.

Dictionary of Occupational Titles, Miller et al. (1980) reported a correlation of .86 between overall GED and Aptitude G; therefore, the first and simplest way to determine Reasoning is to use General Aptitude Test Battery Aptitude G (General Learning Ability). The second method is to use the Cognitive and Conceptua. Abilities Test (C-CAT); this is part of the SAGE vocational assessment system (Kass et al., 1985). The SAGE system is discussed in greater detail on page 72.

The third method is to administer a specific test for the Reasoning level and then to assign one of the six Reasoning values to the results. If the client has low literacy skills or is from another culture, non-verbal measures of reasoning are advised. Some of these are as follows:

1. Culture Fair Tests, Scales 1, 2, and 3, Forms A or B (IPAT or Cattell)

   Purpose - A nonverbal instrument intended to measure individual intelligence with a minimum of influence from verbal fluency, cultural climate, and educational level.

Times - Group administered in 30 minutes for full test. Hand scored in approximately 15 minutes.

Recommended Client Group - All client groups through adult. Scale 1 was designed for mentally retarded persons. Since it is non-verbal, the test can be used with hearing impaired persons.

Conversion to GED - Figure 25 presents the estimated conversion between the normalized standard score I.Q.'s for Scales 2 and 3, on Tables 5.2 and 5.3 of the IPAT manual (Institute for Personality and Ability Testing, 1973). To use this Table 5, find the range of IPAT I.Q. and assign the corresponding Reasoning level.

Available From - Institute for Personality and Ability Testing

2. SRA Pictorial Reasoning Test (PRT)

Purpose - A general ability test designed to assess potential for training and employment among persons with reading problems.

Times - Group administered either as timed (15 minutes) or untimed (estimate 30 minutes); scoring takes about 20 minutes. (The authors of this book recommend the untimed method.)

Recommended Client Group - Ages 14 or older with high school education or less. With extra practice exercises, may be useful for mentally retarded persons and hearing impaired persons.

Conversion to GED - Figure 25 presents the estimated transformation between raw scores and GED Reasoning Level scores for two norm groups, industrial and educational. These conversions are based in data provided in Table 27 of the test manual (McMurry & Arnold, 1973).

3. Standard Progressive Matrices (Raven or SPM)

Purpose - The Raven is a robust test of reasoning ability for all persons regardless of age, educational level, or culture.

Times - An untimed individual or group test with most persons completing in an hour. Hand scoring takes about 15 minutes.

Recommended Client Group - According to the manual, the test is useful for almost everyone from children to older adults.

Conversion to GED - Figure 25 presents the estimated transformation between the percentile scores and the Reasoning level. To use this conversion chart, begin with the data on "Table V. The Self-Administered or Group Test (Adults)" (Raven, 1960, p. 15). Find the percentile score using appropriate age column. Convert this percentile to GED rating level with Table 5.

Available From - Western Psychological Services

FIGURE 25

Estimated Conversion Table to GED Reasoning Level from Distributions of Selected Tests

Reasoning Level	Test			
	Culture Intelligence Test (Scales 2 and 3)	SRA Pictorial Reasoning Test		Standard Progressive Matrices
		Industrial	Educational	
Mean	100	57.3	52.8	Percentile
S.D.	16	7.7	7.6	Scores
Level 1	83 or lower	41 or lower	37 or lower	9 or lower
Level 2	91-84	42-48	38-44	10-24
Level 3	92-99	49-56	45-52	25-49
Level 4	100-116	57-65	53-60	50-75
Level 5	117-133	66-73	61-68	76-90
Level 6	134 or higher	74 or higher	68 or higher	91 or higher

Figure 25 is intended to provide a very rough procedure for equating the scores of three commonly used tests to the six point Reasoning scale. For the three tests the mean or 50th percentile was arbitrarily assigned the value between Level 3 and 4. The Reasoning levels were then estimated either by standard deviations or percentiles. Because items on the Culture Fair Intelligence Test were judged to have a low difficulty level, Reasoning levels 1, 2, and 3 were determined by subtracting one-half a standard deviation for each succeeding score (e.g., 100 - 8 = 92). Therefore, a score of below 83 is only one and a half standard deviations below the mean. Above Level 4, however, the full standard deviation of 16 was used. Two norm groups are given for the SRA Pictorial Reasoning Test - Industrial and Educational. Both of these were taken from Table 27 in the 1983 edition of the test manual. The estimated cut-offs were determined by adding or subtracting the entire standard deviations to or from their respective mean values. This had the effect of forcing the six Reasoning levels into a standardized distribution, where Levels 1, 2, and 3 are below the mean and Levels 4, 5, and 6 are above the mean. Finally, the Standard Progressive Matrices is based on Table 5 in the 1960 edition of the manual. Because this manual does not give scores based on a normal frequency distribution, percentile norms were used. The 50th percentile was established between Level 3 and 4. These two levels each included 25% of the distribution. Levels 2 and 5 each included 15%; Levels 1 and 6 included 10% each.

In summary, this section has discussed some tests and estimating procedures for determining literacy level. Literacy has been defined as obtaining measures of Language and Mathematics, as defined in General Educational Development. Reasoning ability appears to be a complex combination of general intelligence, formal education, and possibly employment history and is more difficult to measure directly. The three measures suggested for estimating Reasoning levels focus on general ability while attempting to reduce cultural effects.

Aptitudes and Skills Assessment

The second assessment service measures vocational aptitudes and certain well defined vocational skills. Because there are a wide variety of general and specific aptitudes and almost as many specific skills as there are occupations, the first task is to carefully select critical aptitudes and skills that can be measured in a short period of time. These, of course, depend on the needs of the client. Clients not having specific vocational goals should be tested on the commonly accepted vocational aptitudes; those with a specific goal, such as a job as a typist, should be tested for specific job related skills. If the evaluation center tests employment applicants for private business, the aptitudes and skills required on the specific job must be evaluated.

Aptitudes - The word "aptitude" is often difficult to define in a consistent manner. However, most definitions include the concept that an aptitude is a trait, characteristic, etc. that can be used to predict future success. Because the very essence of vocational assessment is to predict future success in a single job or cluster of closely related jobs from tests, work samples or other measures, prediction is the key element in any definition of "aptitude". For example, Cronbach and Snow (1977) defined aptitude as: "any characteristic of a person that forecasts his probability of success under a given treatment" (p. 6). The U.S. Department of Labor defines aptitudes as: "the specific abilities required of a person to perform a given work activity" (Botterbusch, 1983b, p. 108). Within the context of this publication aptitudes will be defined as vocationally relevant abilities that can be defined and measured objectively.

If a general assessment of vocationally relevant aptitudes is needed, the center should start with assessing the 11 aptitudes defined by the U.S. Department of Labor: (1) G - General Learning Ability, (2) V - Verbal Aptitude, (3) N - Numerical Aptitude, (4) S - Spatial Perception, (5) P - Form Perception, (6) Q - Clerical Perception, (7) K - Motor Coordination, (8) F - Finger Dexterity, (9) M - Manual Dexterity, (10) E - Eye-Hand-Foot Coordination, and (11) C - Color Perception. Over 30 years of government testing research has established the validity of these aptitudes. Because these 11 aptitudes are almost universally accepted in vocational evaluation, assessment, and counseling for most clients, the community evaluation center should focus on quick and accurate determination of these aptitudes. These 11 aptitudes are also required to develop the Worker Trait Profile needed for vocational counseling and as input for computerized job matching systems.

The aptitude scores are usually converted into a five point rating scale based on normal probability distribution (i.e., bell-shaped curve). Each segment of this distribution is characterized by a numerical rating and verbal definition:

1. The top 10% of the population - This segment of the population possesses an extremely high degree of the aptitude.

2. The highest third, exclusive of the top 10% of the population - This segment of the population possesses an above average or high degree of the aptitude.

3. The middle third of the population - This segment of the population possesses a medium degree of the aptitude, ranging from slightly below to slightly above average.

4. The lowest third exclusive of the bottom 10% of the population - This segment of the population possesses a below average or low degree of the aptitude.

5. The lowest 10% of the population - This segment of the population possesses a negligible degree of the aptitude. (U.S. Department of Labor, 1982a, p. 256)

There are several measures for determining most of these 11 general aptitudes. The original measure of the first nine of the eleven aptitudes was the U.S. Department of Labor's (DOL) General Aptitude Test Battery (GATB). Over the years other instruments have been developed to measure the same aptitudes. The motivation behind these developments have been real or perceived problems with the GATB, such as the GATB's reading level, administration time, test anxiety caused by the GATB, and its general inappropriateness for disabled and disadvantaged populations. All of these other instruments have based their validation studies on correlations with the original GATB. However, the GATB is much cheaper to purchase, administer and score than the assessment systems described below. Although these systems are effective for special populations, it is more practical to administer the GATB to persons who read at a sixth grade level or higher, and who are familiar with and who can tolerate formal test administration procedures.

Figure 26 compares the aptitudes measured by the GATB and other assessment devices; please note that with the exception of SAGE not every instrument contains a measure of each DOL aptitude[8]. This means that other objective measures of these aptitudes must be used. Some potentially useful measures will be described later. The GATB and other devices for measuring the DOL aptitudes are briefly described as follows:

1. General Aptitude Test Battery (GATB)

   Purpose - The GATB measures "vocationally significant aptitudes" that are useful in vocational counseling, job selection and job placement. The GATB measures the first nine of the DOL aptitudes.

   Times - The group administered test takes between two and a half and three hours; instructions are very formal and standardized. Scoring can be done manually or by machine; hand scoring takes about 20 minutes.

   Recommended Client Group - High school through adults. Requires at least a sixth grade reading level. Successful use with deaf and emotionally disturbed clients has been reported.

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[8] The reader should look beyond Figure 26 before deciding whether or not to purchase a particular assessment system. Norms, reliability, and above all, construct and empirical validity must be considered. Cost and time considerations are also important.

Conversion to Aptitudes - The aptitude scores are reported using standard scores with a mean of 100 and a standard deviation of 15. These can be converted to the five-point aptitude rating using Figure 27.

Available from: Contact State Employment Service for training and use.

FIGURE 26

U.S. Department of Labor Aptitudes Measured by Various Tests and Assessment Devices

Aptitude	Test or Assessment Device			
	GATB	Apticom	Micro-TOWER	VAB (SAGE)
G - General Learning Ability	G	G		G
V - Verbal Aptitude	V	V	V	V
N - Numerical Aptitude	N	N	N	N
S - Spatial Perception	S	S	S	S
P - Form Perception	P	P		P
Q - Clerical Perception	Q	Q	Q	Q
K - Motor Coordination	K	K	K	K
F - Finger Dexterity	F	F	F	F
M - Manual Dexterity	M	M	M	M
E - Eye-Hand-Foot Coordination		E		E
C - Color Perception				C

FIGURE 27

General Aptitude Test Battery Conversions to Aptitude Ratings

GATB Score	Aptitude Rating	z Score	Percent of Distribution
126 or above	1	over 1.3	+.8944
109 to 125	2	.45 to 1.25	+.6736 to +.8943
92 to 108	3	-.40 to .41	-.3264 to +.6554
74 to 91	4	-.45 to -1.3	-.3264 to +.8944
73 or less	5	under -1.3	-.8944

2. Apticom

Purpose - This computerized assessment system measures ten of the eleven DOL aptitudes (Figure 26).

Times - The entire Apticom can be administered in one and a half to two hours. The battery can be hand scored in a few minutes or computer scored.

Recommended Client Group - English or Spanish speaking disadvantaged job applicants, high school or special education students and rehabilitation clients.

Conversion to Aptitude Ratings - The final aptitude scores are given in standard scores; these are converted to rating 1 through 5 through use of Figure 27. For example, a Finger Dexterity aptitude score of 112 would translate to an aptitude rating of 2 (i.e., the highest third, exclusive of the top 10% of the population). The conversion of aptitudes to the five point scale is discussed in Apticom System Technical Manual, page 109 (Harris et al., 1985).

Available from: Vocational Research Institute

3. Micro-TOWER

Purpose - Micro-TOWER is used to evaluate clients in a group setting on basic aptitudes (Figure 26). The system is basically a group aptitude test that uses work sample methodology to measure seven aptitudes. With group discussions included, the system could be used as a basis for behavior observations and vocational counseling.

Times - Total testing time is about 15 hours; if group discussions are included, the total evaluation takes from 19 to 20 hours. Scoring should not take more than a few minutes for each test.

Recommended Client Group - The system was primarily aimed at a general rehabilitation population, but it can be used with special education students, disadvantaged persons, and adult offenders.

Conversion to Aptitude Ratings - The Micro-TOWER does not have statistical procedures for combining work sample scores into a single aptitude score or

rating; this must be done subjectively. First organize the test scores into Aptitude groups using the Summary of Work Sample Performance form on page 39 of the Micro-TOWER General Manual: Administration & Scoring (ICD, 1977a). When this is completed, select the most appropriate norm group for the client from the Micro-TOWER Technical Manual (ICD, 1977b). These norms tables are given in percentages. Use the following conversion:

Aptitude Level	Percentile for Micro-TOWER
Level 1	10 or less
Level 2	11 - 30
Level 3	31 - 60
Level 4	61 - 90
Level 5	91 or higher

(Because the Micro-TOWER norms tables are given mostly in five percent increments, the above chart does not separate the percentiles into the aptitude rating levels at the exact lower third, middle third, and upper third.) After the level score is assigned to each work sample, visually review each rating and assign a single aptitude level for each Aptitude.

Available from: ICD Rehabilitation and Research Center

4. System for Assessment and Group Evaluation (SAGE)

Purpose - The entire SAGE will provide a measure of all variables in the Worker Trait Profile. The Vocational Aptitude Battery section of the SAGE assesses all eleven of the DOL aptitudes.

Time - The group administered VAB have an actual test time of 57 minutes. Total administration time should be about one and a half hours.

Recommended Client Group - The system is currently being used by junior and senior high school students and is especially useful with disadvantaged persons.

Conversion to Aptitude Ratings - The SAGE manual (Kass et al., 1985) discusses conversion from raw scores to aptitude. A special chart is provided by the developer.

Available from: Progressive Evaluation Systems, Corp.

As can be seen from Figure 26, the GATB and Micro-TOWER do not measure the Eye-Hand-Foot Coordination, and the GATB, Apticom, and Micro-TOWER do not measure Color Perception. If the evaluator requires objective measurement of these two aptitudes, other devices must be used. The following work samples measure Eye-Hand-Coordination:

1. Eye-Hand-Foot Coordination (Valpar 11)

Purpose - To assess Eye-Hand-Foot Coordination, Spatial Perception, Motor Coordination, and Finger Dexterity.

Times - Valpar 11 can be administered and scored in less that 45 minutes.

Recommended Client Group - Valpar 11 should be suitable for almost any population except clients with severe physical disabilities.

Conversion to Aptitude Ratings - The time norms are converted to aptitude ratings on Table 1 of the manual. The work sample measures Eye-Hand-Foot Coordination at the aptitude ratings 2 through 5.

Available from: Valpar International Corporation

2. Grommet Assembly (JEVS #20)

Purpose - To assess Eye-Hand-Foot Coordination, machine tending, and work rhythm.

Recommended Client Group - JEVS #20 should be suitable for almost any population except clients with severe physical disabilities (Jewish Employment and Vocational Service, 1973).

Conversion to Aptitude Ratings - Because the 1975 norms (Jewish Employment and Vocational Service, 1976) only provide a 1-2-3 rating with no percentiles or frequency distributions, conversion to the five point aptitude rating system must be based on locally developed norms.

Available from: Vocational Research Institute

3. Drill Press (VIEWS #16)

Purpose - To assess Eye-Hand-Foot Coordination, the dexterity aptitudes, machine tending, and work rhythm.

Recommended Client Group - The VIEWS was designed for and normed on mentally retarded persons (Cohen, 1977).

Conversion to Aptitude Ratings - Because the norms only provide a 1-2-3 rating with no percentiles or frequency distributions (Vocational Rehabilitation Institute, 1977), conversion to the five point aptitude rating system must be based on locally developed norms.

Available from: Vocational Research Institute

4. Spot Welding (VITAS #19)

Purpose - To measure Eye-Hand-Foot Coordination and Production Technology (GOE code: 06.01).

Recommended Client Group - "VITAS is designed for educationally and/or culturally disadvantaged persons of both sexes. The System is not intended for individuals with more that a 12th grade education, the physically handicapped, or the mentally retarded" (Vocational Rehabilitation Institute, 1979, p. 1).

Times - Estimate less than 45 minutes to administer and score.

Conversion to Aptitude Ratings - Because the norms only provide a 1-2-3 rating

with no percentiles or frequency distributions, conversion to the five point aptitude rating system must be based on locally developed norms.

Available from: Vocational Research Institute.

Color Perception is the last standardized aptitude to be measured; this aptitude can be measured by the following devices:

1. Color Matching Aptitude Test

   Purpose - This test measures "color perception for vocational placement. It is used to screen for positions in paint factories, coatings industries such as varnishes, paints and lacquers" (Keyser & Sweetland, 1983, p. 704).

   Times - This untimed test takes between 45 minutes and one hour. It is quickly scored by hand.

   Recommended Client Group - The test is useful for most adults.

   Conversion to Aptitude Ratings - No information available.

   Available from: Federation of Societies of Coating Technologies.

2. Farnsworth-Munsell 100 Hue Test

   Purpose - This test measures color vision anomalies and color aptitude.

   Times - This individually administered, untimed test is given in about ten minutes; it is hand scored in a few additional minutes.

   Recommended Client Group - The Farnsworth can be used with any population over age 6.

   Conversion to Aptitude Ratings - No information available.

   Available from: Munsell Color

3. Multi-Level Sorting (Valpar 7)

   Purpose - To assess Color Perception, Motor Coordination, and Finger Dexterity.

   Times - Valpar 7 can be administered and scored in less that 30 minutes.

   Recommended Client Group - Valpar 7 should be suitable for almost any population except clients with severe upper extremity disabilities.

   Conversion to Aptitude Ratings - The time norms are converted to aptitude ratings on Table 1 of the manual. The work sample measures Color Perception at the aptitude ratings 2 through 5.

   Available from: Valpar International Corp.

4. Tile Sorting (JEVS #10, VIEWS #1)

Purpose - To assess Color Perception, Motor Coordination, Finger Dexterity and Manual Dexterity.

Recommended Client Group - These work sample should be suitable for almost any population except clients with severe upper extremity disabilities.

Conversion to Aptitude Ratings - Because the JEVS and VIEWS norms (Jewish Employment and Vocational Service, 1976; Vocational Research Institute, 1977) only provide a 1-2-3 rating with no percentiles or frequency distributions, conversion to the five point aptitude rating system must be based on local norms.

Available from: Vocational Research Institute

In summary, the above several pages have listed and briefly described one test battery and four assessment systems that provide standardized measurement for all or some of the eleven aptitudes considered critical predictors of vocational success by the U.S. Department of Labor. Additional information was presented on work samples that measure one specific aptitudes. Accurate measurement of these aptitudes provides a wealth of information that can be used in counseling, job matching, and placement.

Skills Testing - While aptitudes predict future performance based on general traits or abilities, skill testing assesses specific vocational skills that relate directly to a single job or a cluster of jobs. For example, the Psychological Corporation's Typing Test for Business could be useful for assessing a variety of occupations in which typing or keyboarding skills are necessary: Legal Secretary (201.362-018), Secretary (201.362-030), Clerk-Typist (203.362-010), and Terminal Operator (203.582-050).

Before establishing a skill testing program, the community transition center must first determine the general types of skills to be tested and the client referral source for each. Skill testing is aimed at two potential markets. First, the transition center may be testing clients referred by a variety of sources (e.g., welfare agencies, students in transitional programs, or self-referrals) to determine if they have the potential for specific jobs. These could be jobs within the community that have high turnover rates or jobs for which a specific employer is presently hiring. In the second situation the center evaluates employment applicants for the public or private sectors; in other words, the community center acts as a personnel department for a specific local employer or employers. A third possibility is for the center to combine these two functions into a program of recruiting and screening potential employees for one or more employers within the community. This type of activity could bridge the gap between social service considerations and employer needs for qualified workers. By actively reaching out to handicapped persons, women, and ethnic and racial minorities covered by affirmative action, the center could provide an even greater service to both individuals and business.

Regardless of the situation, the community transition center needs to carefully select the proper test(s) and/or other assessment measure(s). The community center assesses a client's behaviors, aptitudes, and skills to determine if the client can perform the job(s) in question. Regardless of reason for the referral, the center needs to take an active part in deciding what measures to use. Ideally, these measures should be based on several factors:

1. The empirical validity of the test - If the Equal Employer Opportunity Commission testing practices are followed, the test or tests must be valid for

various defined groups, such as racial and ethnic minorities, as well as women and handicapped persons. Current emphasis is on locally performed validity studies. Because EEOC guidelines are very technical and often change as a result of court rulings, it is suggested that the transition center obtain expert help in this area.

2. The content validity of the test - Briefly, content validity compares the content of the test to specific tasks and/or elements of a job or several jobs. Content validity is based on commonalities between the tasks required by the job and those required by the test. Often the content validity of a test is determined through the use of job analysis procedures that compare job and test content (Guion, 1979). Returning to the typing example, a typing test for a legal secretary should contain wills, contracts, briefs, and other legal documents. A typing test for a medical secretary would include reports to insurance carriers, correspondence to patients, and clinical notes. Ideally, both should contain words and phrases unique to these professions. Although both need to know basic keyboard skills, they also need to know specific job related skills.

3. The desires of the employer - The employer may already have a testing or assessment procedure that he/she wishes to continue to follow. This procedure may be based on carefully performed test validation procedures or it may be only "the way we've always done things." Although these desires must be carefully considered, the center needs to remain objective and independent when developing an applicant testing program. The center should never act as a "front" for an employer trying to avoid fair hiring practices.

4. The time and cost - Most vocational tests are designed to have short administration times combined with easy scoring and reporting. Although these factors should be considered, they must also be compared against validity requirements.

Keeping the above guidelines in mind, the transitional center can select an approach that best suits the local situation.

Specific aptitudes are closely related to specific job skills. In contrast to the rather general aptitudes described above (e.g., G, V, and S), specific aptitudes measure a narrower ability area, often related to a specific job duty. For example, the Bennett Mechanical Comprehension Test deals only with the application of physics to "the ability to perceive and understand the relationship of physical forces and mechanical elements in practical situations" (Bennett, 1969, p. 1).

There are numerous tests that assess either very specific aptitudes (e.g., mechanical ability) or skills. There are, also, short test batteries designed to measure all of the critical skills and specific aptitudes for certain jobs or job clusters. These batteries combine several specific skills and aptitudes into one convenient format. For example, the Computer Programmer Aptitude Battery (Palormo, 1974) combines the following five sub-tests into a mini test battery for programmers: Verbal Meaning, Reasoning, Letter Series, Number Ability, and Diagramming.

If the center decides to develop a skill testing service, it has a wide variety of skill, specific aptitude, and occupational battery tests at its disposal. In addition to the tests listed below, the evaluator might consider the I.P.I. (Industrial Psychology

Inc.) Aptitude-Intelligence Test Series. This series contains 18 specific tests that can be used to assess for employment or promotion in over 20 job fields: junior clerk, numbers clerk, office machine operator, contact clerk, senior clerk, secretary, unskilled worker, semi-skilled worker, factory machine operator, vehicle operator, inspector, skilled worker, sales clerk, salesman, sales engineer, scientist, engineer, office technical, writer, designer, instructor, office supervisor, sales supervisor, factory supervisor, optometric assistant, dental office assistant, dental technician, and computer programmer (Bardwill, 1985) Although the final selection of tests is based on local needs and resources, the following list will provide some ideas:

Clerical

Clerical Selection Battery (London House Press)

General Clerical Test (Psychological Corporation)

Minnesota Clerical Test (Psychological Corporation)

National Business Competency Tests and Entrance Tests, includes Office Procedures Test, Secretarial Procedures Test, Type-writing Test, Accounting Procedures Test - Trial Edition, and Stenographic Test (National Business Education Association).

Office Skills Tests, includes 12 short tests: Checking, Coding, Filing, Forms Completion, Grammar, Numerical Skills, Oral Directions, Punctuation, Reading Comprehension, Spelling, Typing, and Vocabulary (Science Research Associates).

RBH Classifying Test (Richard, Bellows, Henry and Company, Inc.)

Short Tests of Clerical Ability, includes seven short tests: Arithmetic Skills, Business Vocabulary, Checking Accuracy, Coding, Oral and Written Directions, Filing, and Language (Science Research Associates, Inc.)

SRA Typing Test (Science Research Associates)

Typing Test (Richard, Bellows, Henry and Company, Inc.)

Typing Test for Business (The Psychological Corporation)

Computer

Computer Operator Aptitude Battery (Science Research Associates)

Fogel WP Operator Test (Association of Information Systems Professionals)

Programmer Analyst Aptitude Test (Wolfe Personnel Testing and Training Systems, Inc.)

Wolfe Computer Operator Aptitude Test (Wolfe Personnel Testing and Training System, Inc.)

Word Processing Test (The Psychological Corporation)

Word Processing Assessment Battery (Science Research Associates, Inc.)

Engineering

Electrical Sophistication Test (Psychometric Affiliates)

Purdue Blueprint Reading Test (Purdue University Book Store)

Purdue Creativity Test (Purdue University Book Store)

Interpersonal Skills and Attitudes

Business Judgment Test (Martin Bruce, Publishers)

Employee Attitude Survey (London House Press)

Styles of Leadership Survey (Teleometrics International)

Management and Supervision

How Supervise: (The Psychological Corporation)

Leadership Opinion Questionnaire (Science Research Associates, Inc.)

Supervisory Profile Record (Richardson, Bellows, Henry and Company, Inc.)

Mechanical Abilities

Bennett Mechanical Comprehension Test (The Psychological Corporation)

MacQuarrie Test for Mechanical Ability (CTB/McGraw-Hill)

Mechanical Movements (London House Press)

Primary Mechanical Ability Test (Stevens, Thurow and Associates)

Purdue Mechanical Adaptability Test (Purdue Research Foundation)

Revised Minnesota Paper Form Board Test (The Psychological Corporation)

SRA Mechanical Aptitudes (Science Research Associates)

Dexterity and Motor Coordination[9]

Card Sorting Box (Lafayette Instrument Company, Inc.)

Crawford Small Parts Dexterity Test (The Psychological Corporation)

Hand-Tool Dexterity Test (The Psychological Corporation)

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[9] The following specialized dexterity and coordination tests for visually disabled persons are available from Mississippi State University Research and Training Center: Fine Finger Dexterity Work Task Unit, Foot Operated Hinged Box Work Task Unit, Hinged Box Work Task Unit, Multifunctional Work Task Unit, and Revolving Assembly Table.

Minnesota Manual Dexterity Test (Lafayette Instrument Company, Inc.)

Minnesota Rate of Manipulation Tests (American Guidance Service)

O'Connor Finger Dexterity Test (Stoelting Company)

O'Connor Tweezers Dexterity Test (Stoelting Company)

Pennsylvania Bi-Manual Worksample (American Guidance Service)

Purdue Pegboard Test (Science Research Associates)

Sales

Aptitudes Associates Test of Sales Aptitude (Martin Bruce, Publishers)

Diplomacy Test of Empathy (Psychometric Affiliates)

Sales Attitude Checklist (Science Research Associates)

In summary, this section has suggested the types of skills and specific aptitude testing that can be used for client assessment for a variety of competitive employment purposes.

Physical Demands

One of the most critical employment factors are the physical demands required by each job. Although the physical demands of a job can range from minimal (e.g., computer programmer) to extremely strenuous (e.g., piano mover), each occupation makes specific physical demands on a person. The importance of these physical demands cannot be overestimated. With the exception of mental retardation, physical restrictions caused by congenital problems, illness, and/or accident are the most common reason for disability.

In testing for physical demands or physical capacities, it is critical to keep in mind that physical capacities are not measured or defined as a one or two time effort. Physical capacities also differ from strength: "Capacity connotes the ability of the person to sustain effort over an extended period of time while strength connotes the ability of the person to produce a maximal infrequent effort" (Mathenson and Ogen, 1983 p. 42). The critical part of this definition is time; in order to assess physical capacities, the client must perform the task for a length of time. Thus, the assessment of physical capacities must be long enough to permit the evaluator to determine if the person is capable of performing for whole or part of an eight hour work day. The reader should note that the U.S. Department of Labor definition of "Strength" (see page 81) would be better called "capacity" in this definition.

A Problem of Definitions - The community transitional center must be able to provide objective measures of a person's present physical capacity. The service of assessing physical demands should be useful in the following circumstances: (1) As part of a pre-employment battery for job applicants. Although there are serious ethical questions about "screening-out" persons, many employers do require a physical examination. A physical capacities assessment could be part of this examination. (2) Because physical capacities are a critical part of a person's total Worker Qualification

Profile, they need to be assessed. (3) Much of forensic rehabilitation deals with a loss of physical capacity. In these cases, the major factor is to determine the difference between a client's physical abilities before an accident or illness and his/her present level of functioning. Many Social Security Disability applications, worker's compensation claims, and personal injury claims rest almost entirely on the vocational ramifications of a loss of physical capacity. In general, "any person who has sustained a hand or upper extremity injury, back injury, or lower extremity injury and for whom return to work is a salient issue is a potential candidate..." (Mathenson and Ogden, 1983, p. 27).

Because assessment of physical demands lies on the border of evaluation and medicine, other professions besides vocational evaluators have begun to offer physical capacity assessment. This has lead to some confusion in what is included when determining a client's present level of physical functioning. Therefore, before describing specific physical factors and discussing methods and procedures for their assessment, some definitions must be provided. Although physical demands assessment can be provided both by vocational evaluators and occupational therapists, these two groups use different terminology. According to the VEWAA Glossary (Vocational Evaluation and Work Adjustment Association, 1977), physical demands are defined in terms of the six U.S. Department of Labor factors listed below. Although there is no set term, "physical capacities assessment" and "physical demands assessment" are commonly used to mean the determination of a person's present level of physical functioning. Within the occupational therapy field, the term "work tolerance screening" parallels the evaluation terms "physical capacities assessment" and "physical demands assessment". Work tolerance screening is defined as follows:

> An intensive one-hour to three-hour evaluation in which selected critical physical demands of work are simulated in a controlled setting. This work simulation allows the evaluee to demonstrate his or her own unique response to these work demands. The availability of this information can be of great benefit to the evaluee and to the professional with whom he or she is working in the development of an appropriate vocational goal...(Matheson and Ogden, 1983, p. 107).

In conclusion, the terms "physical capacities assessment" and "work tolerance screening" mean roughly the same thing.

Regardless of the name, both evaluators and occupational therapists view this type of physical assessment as part of a larger process. This larger process is called "vocational evaluation" and is defined by VEWAA as:

> A comprehensive process that systematically utilizes work, either real or simulated, as the focal point for assessment and vocational exploration, the purpose of which is to assist individuals in vocational development. Vocational evaluation incorporates medical, psychological, social, vocational, education, cultural, and economic data into the process to attain the goals of evaluation (Vocational Evaluation and Work Adjustment Association, 1977, p. 12).

Matheson and Ogden (1983) use the term "work capacity evaluation" to mean the entire evaluation or assessment process:

> A comprehensive process which focuses upon the measurement and development of the evaluee's potential for work. It includes evaluation of the

> feasibility for employment, physical and emotional work tolerances, and assessment of aptitudes, temperament, and vocational interests. It is more than an evaluation process in that it often provides services that are intended to improve the evaluee's potential. These services are generally termed "work hardening" (p. 106).

The point of these definitions is that although there are some differences in definitions, both groups see the need for an objective determination of a client's physical abilities.

General Approaches to Classifying Physical Demands - Although there are many ways to report a person's physical capacities, within vocational evaluation physical demands are usually measured in terms of the U.S. Department of Labor job analysis variables or modifications of these variables (e.g., Work Evaluation Systems Technology, 1983a). Based on the 1972 Handbook for Analyzing Job, this system places all physical demands into a six factor classification. These are briefly defined below:[10]

> Factor 1: Strength - The involvement of the worker in one or more of the following activities: standing, walking, sitting, lifting, carrying, push and pulling. These seven activities are combined into five degrees of Strength; one overall level of Strength is assigned to each job: Sedentary, Light, Medium, Heavy, and Very Heavy.
>
> Factor 2 - Climbing and/or Balancing - These activities require coordination of the entire body.
>
> Factor 3 - Stooping, Kneeling, Crouching and/or Crawling - These four related activities require a person to get on the floor or ground, or be able to reach the floor or ground.
>
> Factor 4 - Reaching, Handling, Fingering and/or Feeling - These all deal with the upper extremities, involving range of motion, dexterity, and sense of touch.
>
> Factor 5 - Talking and/or Hearing - These two auditory activities are required in a variety of job situations.
>
> Factor 6 - Seeing - This is the ability to perceive the nature of objects by the eye.

This six factor system is useful when comparing a person's physical capacities to those of a standardized data base, such as the DOT. The problem arises, however, when the evaluator needs additional information about the client. The DOT and its 1982 Supplement contain the physical demands of 12,375 occupations; these are classified by the six factor system defined above.[11] When the DOT data base or other data bases derived either from the DOT or the 1972 Handbook for Analyzing Jobs are used, it is impossible to obtain detailed information. For example, all jobs in the DOT data base either require Factor 4 - Reaching, Handling, Fingering and/or Feeling

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[10] For additional explanation see: A Manual for DOT Related Codes and Handbook for Analyzing Jobs.

[11] The 1986 DOT Supplement uses a more refined system for classifying physical demands.

or they do not; 11,113 or about 90% of the jobs require this factor. In other words, if a client cannot perform Factor 4, he/she should be excluded from 90% of these jobs. Of course, the problem is that the system does not allow for degrees of impairment, which in turn, results in a very crude system of classification.

Because most data bases use only the six factor method, the evaluator wishing to go beyond this system (i.e., to refine the system to include more than six variables) will either have to search for special data bases or develop a local data base. At present there are three ways around this problem. This first is to use the physical demands procedure given in A Guide to Job Analysis. In this more recent Labor Department job analysis publication, 28 separate physical demands are listed. Most of these (e.g., Feeling, Talking, Far Vision, and Lifting) were developed by dividing the older six factor system listed above into much discrete units. In addition, these 28 factors are each rated as: not present, occasional (under 20% of the time), frequent (between 20% and 80% of the time), and constant (over 80% of the time). A local data base could be developed with this revised Labor Department system. The chief advantage of this system is that persons already trained in Labor Department job analysis methods and terms would not have to be retrained; they would only have to classify the job in greater detail. Finally, it should be noted that the Vocational Information Processing System (VIPS) is the only presently available job matching system that accepts these 28 factors (Botterbusch, 1986).

The second way is through the use of a unique computerized job matching system, Isabel.[12] Although designed for career exploration and job placement, the Isabel classification system is applicable to assessing physical capacities. The system compares 95 physical demands and environmental conditions to 150 high demand jobs. These jobs have been analyzed in terms of the same factors. In addition, a second data base contains over 1,000 devices classified by specific factor. A form containing these 95 variables is used for each client; these 95 variables are greatly expanded versions of the Labor Department job analysis physical demands and environmental conditions factors. In everyday use, the evaluator could use a combination of medical records, the devices described later in this section, and limited self-reports to identify the client's limitations in these 95 factors.

The final way is to use the procedures given in Physical Demands Job Analysis: A New Approach (Lytel and Botterbusch, 1981). This work divides physical demands into 195 separate variables, including vision and worksite accessibility. As with the Isabel system, these clearly defined factors could form a basis for physical capacities assessment. The problem with this approach, however, as with using A Guide for Job Analysis, is that there are no available data bases against which to compare the results. Although this method has proven useful for job site modification and job restructuring, it is too unwieldy to be used to develop a large job bank or other occupational data base.

Specific Procedures and Systems - The measurement of physical demands is a compromise between medical restrictions and determining functional limitations. Depending on the physician, he/she may set either liberal or conservative physical restrictions. Although the evaluator should attempt to work within these restrictions, he/she should also be willling on occasion to explore the outer limits of the client's physical capacities. The assessment of physical demands is perhaps the most difficult part of vocational assessment, especially where there is a disability claim pending.

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[12] Distributed by The Magellan Corp. See Botterbusch (1986) for a description.

Although many clients could exceed their medically defined limits, the evaluator should follow these cautions during all physical capacities assessments:.

1. Encourage the use of proper body mechanics and instruct the client when unstable or unsafe body mechanics are being used. The client should not be allowed to continue with the evaluation using unsafe or unstable positioning.

2. Observe physician's restrictions pertaining to the tasks, especially with regard to maximum weight restrictions, stooping, crouching, kneeling, or reaching overhead, or with regard to maximum recommended heart rates or blood pressures.

3. Know the "danger signs" that mean an injured hand, arm, back, knee, heart, etc. is being overstressed. Discontinue the activity when such signs are observed (Mathenson and Ogden, 1983, p. 74).

The evaluator must also never place the client in a situation that would cause additional injury or pain. With this in mind, let's now turn to specific methods for determining physical capacities.

Physical capacity testing involves the use of behavioral observations and the objective results from the device(s) administered. In making behavioral observations, the evaluator should look for signs of fatigue and discomfort as well as other specific behaviors. The following behaviors identified in the Revised MDC Behavior Identification Form (Botterbusch, 1985a) may be useful:

1. Vitality of Work Energy - This category calls for a description of the degree to which a client applies effort to assigned work tasks. This is not a comparison for work speed with other clients or to employed workers. Rather, it is a decision based on observation as to whether a client is working at an energy level which is well what he/she appears to be capable of doing (p. 39).

2. Stamina - This category calls for a judgment of a client's physical capacity to maintain a fairly consistent work pace for a normal work day. The observer is not asked for a medical opinion, but simply for indications of fatigue or physical discomfort during the observation period... The difference between stamina and vitality [above] is that vitality is more commonly related to motivation or social learning, whereas stamina is the physical capacity to perform (p. 41).

3. Personal Complaints - Although the Identification Form defined this behavior in terms of social effect of excessive complaints and negative statements, this behavior can be expanded to include remarks made to the evaluator during physical capacity testing. Comments made about pain and/or discomfort in various parts of the body and about fatigue should be recorded. These observations should refer to the part of the body complained about and the specific action being performed at the time of the complaint (p. 55).

In addition to these rather general behaviors, Mathenson and Ogden (1983) list specific behaviors to be observed when assessing various parts of the body:

1. Hand or upper extremity injury:

   a. Prehension patterns, skill and dexterity for picking up small objects and for fine manipulation of small tools and parts. Presence of intentional tremors.

   b. Abnormal posturing of the hand, such as avoiding the use of one or more digits. Abnormal posturing of the hand, wrist, elbow, or shoulder due to weakness, lack of flexibility, or to avoid discomfort.

   c. Reports of symptoms, including aching, fatigue, sharp pain, tingling, stiffness. Facial expression, verbal descriptions (record verbatim if possible), or other behaviors indicating discomfort. The activities that produced the symptoms and the effect of the symptoms on performance.

2. Back or lower extremity injury.

   a. Duration of sitting and standing tolerance.

   b. Improper sitting or standing posture, including slouching, forward bending, placing weight on one leg when standing, leaning to one side when sitting, supporting weight on a chair arm or table with the upper extremity. Abnormal positioning or posturing due to weakness, lack of flexibility, or to avoid discomfort.

   c. Reports of symptoms, including aching fatigue, sharp pain, tingling, stiffness. Facial expressions, verbal descriptions (record verbatim if possible), or other behaviors indicating discomfort. The activities that produced the symptoms and the effect of the symptoms on performance.

3. Cardiopulmonary dysfunction

   a. Duration of work tolerance

   b. The time needed to complete sections of the activity... This information is used to determine whether the rate of work is consistent.

   c. If the evaluee needs to take breaks during the activity, record the duration and frequency of breaks, and why a break was needed (pps. 63-64).

These observations should be combined with equipment designed to provide a measure of the most common physical demands. Two manufacturers are listed below; both of these emphasize the use of careful behavioral observations and both stress that assessing physical demands require taking the time to determine the client's stamina.

The Work Evaluation Systems Technology company markets a series of devices. The WEST 2 (Work Capacity Evaluation Device) is designed to assess the full range of physical capacities. There are three stages in this assessment: unburdened range of motion, brief tool use range of motion, and weighted retrieval and placement. The

WEST 2 also contains a weight tray used to measure lifting and bending. Another very useful instrument is the WEST 4, consisting of six compression tubes mounted on a bar. The bar can be used mounted on the WEST 2. Each compression tube contains bolt heads that can be turned with a variety of tools. The client turns the bolt heads with a variety of common hand tools. The height of the WEST 4 can be changed to produce changes in body position. Many programs use the WEST 2 in combination with the WEST 4; these two devices appear to provide a basic assessment of physical demands. Another device, the WEST Bus Bench is "designed to provide a global measure of upper-extremity dexterity and coordination" (Work Evaluation Systems Technology, 1983b, p. 1).

The WEST system includes estimates of the amount of energy required to perform various functions. One MET is "equal to the consumption of 3.5 milliliters of oxygen per kilogram of body weight per minute, the typical energy expenditure for a worker sitting at rest" (WEST, 1983a, p. 32). The WEST manuals contain charts for estimating the number of METS required to perform at various degrees of strenuousness for different times. This could prove very useful for carefully matching physical demands with physician's restrictions in persons with cardiovascular disabilities.

Valpar International Corporation markets three devices specifically designed to assess physical demands. The most comprehensive of these is the Dynamic Physical Capacities (Valpar 19); this measures all the Department of Labor factors listed above. Using a simulated shipping receiving clerk work station, Valpar 19 measures strength and endurance from Sedentary to Very Heavy. In addition, the following factors are observed: standing, walking, lifting, carrying, pushing, pulling, climbing, balancing, stooping, kneeling, crouching, reaching, handling, fingering, feeling, talking, hearing, and seeing. The Valpar 19 provides the user with a complete estimate of the six Labor Department physical demands factors defined earlier in this section; it is also capable of providing data on many of the variables defined in A Guide to Job Analysis.

Two other Valpar work samples are designed primarily to assess physical demands. The Upper Extremity Range of Motion (Valpar 4) measures Reaching, Handling, Fingering, and Feeling using a cube containing two different sizes of nut. The Whole Body Range of Motion (Valpar 9) uses an upright frame on which the client removes, moves, and fastens three different plastic shapes. This work sample measures Climbing and/or Balancing, and Stooping, Kneeling, Crouching and/or Crawling. All three Valpar work samples are considered to be more realistic than the WEST system.

In conclusion, the assessment of physical capacity must include three factors: careful definitions of what is to be measured, capacities must be measured over a period of time, and methods of assessment should include behavioral observations and standardized equipment.

Interest

Interests are commonly used to guide a person into a vocational area that offers personal satisfaction. Although in theory interest measurement should have little or nothing to do with a person's abilities and aptitudes, many people grow to like activities in which they are successful. Therefore, the evaluator should always beware of this interaction and should consider this during any vocational counseling. Within the community transitional center interests are to be measured for four major purposes: (1) to provide the client with information for making subjective vocational decisions,

(2) to provide data that can be entered into a client's worker qualifications profile, (3) to serve as a basis for the center's vocational exploration program, and (4) to provide information needed for vocational counseling.

Definitions - A review of any testing textbook or a catalog of tests points out the fact that there are large numbers of interest inventories available. As with other tests, there is no one inventory that will serve all clients who use the transitional center. The problem becomes how to select the most appropriate measures for the wide variety of needs. The first step in this narrowing down process is to take a close look at two different definitions of interest. The first defines interest as a "liking or preference for an activity" (U.S. Department of Labor, 1982a, p. 313). Within the context of this definition, interest is defined as a liking. This liking presumes that a person will like some activities more than others; he/she may also dislike many activities. This definition of interest was used to develop the 12 interest areas used in the Guide for Occupational Exploration (Figure 28).

FIGURE 28

U.S. Department of Labor's
Guide for Occupational Exploration
12 Interest Areas

1. Artistic - An interest in creative expression of feelings or ideas.
2. Scientific - Interest in discovering, collecting, and analyzing information about the natural works and in applying scientific research findings to problems in medicine, life sciences, and natural sciences.
3. Plants and Animals - Interest in activities involving plants and animals.
4. Protective - Interest in the use of authority to protect people and property.
5. Mechanical - Interest in applying mechanical principles to practical situations, using machines, handtools, or techniques.
6. Industrial - Interest in repetitive, concrete, organized activities in a factor setting.
7. Business Detail - Interest in organized, clearly defined activities requiring accuracy and attention to detail, primarily in an office setting.
8. Selling - Interest in bringing others to a point of view through personal persuasion, using sales and promotional techniques.
9. Accommodating - Interest in catering to the wishes of others, usually on a one-to-one basis.
10. Humanitarian - Interest in helping others with their mental, spiritual, social, physical, or vocational needs.

11. Leading Influencing - Interest in leading and influencing others through activities involving high-level verbal or numerical abilities.

12. Physical Performing - Interest in physical activities performed before an audience.

The second definition assumes that a liking for some activities means a dislike for other activities:

> An interest is a tendency to become absorbed in an experience and to continue it, while an aversion is a tendency to turn away from it to something else (U.S. Department of Labor, 1972, p. 317).

This definition implies that if a person has a set preference for one activity, then he/she must have an aversion for the opposite activity. In other words, interests are seen as being a set of opposites; if a person has a preference for one side, then he/she will dislike the other side. The U.S. Department of Labor considers five pairs of statements when determining interest (Figure 29)[13].

Given these two Department of Labor classification systems, the authors urge that the Guide for Occupational Exploration system be used for the following reasons:

1. The GOE classification system provides a classification code for each job in the DOT. This permits an easy cross reference between these two major classification systems.

2. The GOE classification is used to organize many commercial occupational information materials, thus providing a direct link between the GOE interests and occupational exploration.

3. The 12 major interest areas are subdivided into 66 work groups and 348 subgroups. This provides for more discrete classification than the bipolar interest factors. In fact, some authors have attempted to deal with the subgroups in terms of common qualifications.

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[13] The item structure of interest inventories is based on these two methods of measuring. Interest inventories following the first definition will contain a single item (e.g., "Deliver packages and messages to people.") to which the client must respond with some degree of liking or disliking. Inventories following the attraction-repulsion definition force the person into deciding between two or three activities (i.e., called a "forced choice" in measurement): Have a stamp collection, or repair cars, or play tennis. The problem with these measurements is that it is assumed that if a person likes one activity he/she dislikes the other. This clearly discriminates against persons with interests in several areas. In the above example, what if the client liked to collect stamps and also liked to play tennis?

FIGURE 29

U.S. Department of Labor
Bipolar Interest Factors

1a. A preference for activities dealing with things and objects.
vs.
1b. A preference for activities concerned with the communication of data.

2a. A preference for activities involving business contact with people.
vs.
2b. A preference for activities of a scientific and technical nature.

3a. A preference for activities of a routine, concrete, organized nature.
vs.
3b. A preference for activities of an abstract and creative nature.

4a. A preference for working for the presumed good of the people.
vs.
4b. A preference for activities that are carried on in relation to processes, machines, and techniques.

5a. A preference for activities resulting in the prestige or esteem of others.
vs.
5b. A preference for activities resulting in tangible, productive satisfaction.

Selection - The selection of interest inventories for use in the center should reflect the clients served and their anticipated needs. The reading level of the clients should be the first consideration. The reading level of interest inventories ranges from picture interest measures requiring no reading to measures requiring an estimated eighth grade reading level. The client's reading level can be determined during Literacy Assessment. If the center does not have a reading level for the client, self-reports, educational history, and/or employment history should be used to estimate the reading level.

The occupations covered by the inventory are the next concern. There are two considerations. The first is the number of different occupational areas covered. Does the inventory cover all or most of the jobs in the DOT, GOE or in the test author(s)' own classification scheme? The second concern is the level of occupations within each occupational area. Within most occupational areas there are professional, skilled, and semi-skilled jobs. Does the inventory cover the entire range of these jobs, or does it only cover professional occupations?

What system is used to classify the jobs or occupations selected? The evaluator must ask if DOT or GOE codes are given for the occupations. If the results cannot be related to the DOT, what other classification systems are used? Some inventories base or classify their results on the Holland Occupational Codes (See Figure 30 for definitions). Until recently, there was no direct "translation" between Holland Codes and the DOT codes. An excellent book by Gottfredson et al. (1982) provides this crosswalk; it provides the most important three Holland codes for each occupational

definition in the DOT. It also provides a table showing the relationship between GOE codes and Holland codes. Other inventories use unique classification systems that are difficult to "translate."

FIGURE 30

Definitions of Holland Occupational Codes

R Occupations classified as Realistic (or R) tend to involve concrete and practical activity involving machines, tools, or materials.

I Occupations classified as Investigative (or I) tend to involve analytical or intellectual activity aimed as problem solving, trouble shooting, or the creation and use of knowledge.

A Occupations classified as Artistic (or A) generally involve creative work in the arts: music, writing, performance, sculpture, or other relatively unstructured and intellectual endeavors.

S Occupations classified as Social (or S) typically involve working with people in a helpful or facilitative way.

E Occupations classified as Enterprising (or E) tend to involve working with people in a supervisory or persuasive way, in order to achieve some organizational goal.

C Occupations classified as Conventional (or C) typically involve working with things, numbers, or machines in an orderly way to meet the regular and predictable needs of an organization.

Is any information given besides occupational interests? Although some interest inventories only provide results in terms of specific jobs or occupational areas, the more sophisticated ones assess underlying themes. For example, the Career Assessment Inventory provides information on the following: Fine Arts-Mechanical Scale, Occupational Extroversion-Introversion Scale, and Educational Orientation Scale (Johansson, 1982).

Listed below are some interest inventories to consider:

1. Career Assessment Inventory (CAI)

   Purpose - To identify interests through an inventory which is oriented toward the more "nonprofessional" end of the world of work.

   Times - Average administration time for this untimed test is 30 to 45 minutes to either groups or individuals.

Recommended Client Group - Appropriate for those seeking immediate career entry or those seeking careers requiring some post secondary education. Sixth grade reading level.

Scales - Six Holland themes, basic interest areas, 91 specific occupational scales.

Available from - National Computer Systems.

2. Career Occupational Preference System (COPS)

Purpose - To determine a person's interests in 14 occupational clusters.

Times - Flexible administration to either individuals or groups and can be self-administered. Most persons complete in about 20 to 30 minutes. Hand scored in 10 to 20 minutes; machine scoring available.

Recommended Client Group - High school and college students. Estimated eighth grade reading level.

Scales - Fourteen interest clusters, clusters defined by sample occupations with DOT codes and college majors.

Available from - EdITS

3. Interest Check List (ICL)

Purpose - Determines a person's employment interests; used as a guide to vocational counseling and self-assessment.

Times - This untimed test takes about 20 minutes, group administered, scored in about five minute.

Recommended Client Group - Persons with a fourth grade reading level or over. Available in Spanish.

Scales - Produces a score on each of the 12 GOE areas of work.

Available from - U.S. Department of Labor

4. Revised Reading-Free Vocational Interest Inventory (RFVII)

Purpose - A nonreading vocational preference test for use with mentally retarded and learning disabled persons from age 13 to adult.

Times - Untimed, takes about 45 minutes to complete. Hand scored in 15 to 20 minutes.

Recommended Client Groups - Educable mentally retarded persons, learning disabled persons, and adult sheltered workshop persons. Items in pictures, no reading required.

Scales - Eleven occupational clusters.

Available from: Elbern Publications

5. Strong-Campbell Interest Inventory (SCII)

   Purpose - The SCII is "intended to help guide persons into an area where they are likely to find the greatest job satisfaction."

   Times - This untimed test can be administered to individuals or groups in about 30 minutes. Computer scoring is necessary.

   Recommended Client Group - Persons over age 17 having potential for advanced training. At least sixth grade reading ability. The SCII is designed to measure interest in occupations requiring considerable post-secondary training.

   Scales - Six general occupational themes, 23 basic interest scales, 124 occupational scales, and nine administrative and special indexes.

   Available from - National Computer Systems

6. Wide Range Interest-Opinion Test (WRIOT)

   Purpose - "...designed to cover as many areas and levels of human activity as possible." The WRIOT covers jobs ranging from unskilled to professional level.

   Times - This untimed test can be given to individuals or groups in about 40 to 50 minutes. Hand scored in about 20 minutes; machine scoring available.

   Recommended Client Group - Because of the picture item format, the WRIOT is used with non-readers. Manual contains some information on modifications for mentally retarded, physically disabled, and other disabilities.

   Scales - Seven vocational attitude scales; 19 occupational clusters.

   Available from - Jastak Associates, Inc.

In summary, the measurement of interest depends to a large degree on the reading level of the client, and how a specific interest inventory organizes or classifies the many occupations that exist.

Work Behaviors and Attitudes

It is almost a truism that more persons are fired from jobs because of poor work behaviors than from a lack of skill. Therefore, one of the major programs offered by the community transitional center should assess vocational behaviors and work attitudes. These are the behaviors such as being on time to start work, following supervision, putting forth a good effort, and maintaining grooming appropriate for the job. Although harder to measure, attitudes about acceptance of supervision, honesty on the job, attitudes about working with minority or disabled persons, and attitudes about safety are also important. This service could be offered to the following groups: (1) applicants for employment, (2) alcohol and chemical dependent persons, (3) welfare recipients, (4) juvenile offenders, and (5) secondary students in transitional programs. In short, this service could be offered to any person whose work habits or attitudes are suspect. Persons who report having numerous jobs in a fairly short period of time should also be considered for this service.

Behaviors to be Measured - The goal of such a service would be to inform both the client and the funding source about problem behaviors. If the center is screening applicants for an employer, the employer would be informed of the results and he/she would make the hiring decision. If the client was referred by a third party payee, the community center would provide the referral source with a report specifying the behaviors observed or attitudes tested; this report could also contain recommendations for treatment, such as work adjustment, counseling, and reality therapy. If appropriate the community center could also provide vocational counseling as one form of treatment.

Prior to providing this service, the center would first have to define behaviors and attitudes that are critical and then determine how these would be measured. One source of critical behaviors comes from Buehler, et al. (as quoted in Rodhouse, 1977). They published a list of about 50 behaviors positively or negatively related to dismissal from employment. Lack of interpersonal skills and deviant behavior, not simply the lack of production skills, were the major reasons for getting fired. Technical skills and the ability to meet production were important, but after these were met, social factors became increasingly critical. A more recent study by Rodhouse (1977) updated Buehler's findings using a sample of 12 large employers and 15 rehabilitation facilities in southern Illinois. The results (Figure 31), listed in order of importance, confirmed previous studies. There are 50 behaviors listed on Figure 31; only six (#7 completes tasks, #27 conserves power and equipment, #33 destroys company property, #42 turns out quality work, #43 keeps the quantity of production acceptable, and #49 operates machinery without being authorized) are related in some way to the technical aspects of the job. Items #42 and #43 were the only ones mentioning quality and quantity. The rest of the behaviors deal with work behaviors. The most important is the ability or motivation to work:

1. Works 8 hours/day.
2. Is willing to work.
3. Will come to work if other than regular hours.
5. Arrives at work on time.

A second group of behaviors centered on the social relationships between supervisors, co-workers and customers. Some of the highest rated items in this group were:

9. Is polite to customers and/or visitors.
13. Is willing to take orders.
14. Carries out orders.
15. Listens to instructions.
16. Gets along with co-workers.
17. Gets along with supervisors.

A third group centered on negative personal behaviors that will not be tolerated on the job, such as:

4. (Does not) Have a neat appearance.
6. Drinks intoxicating beverages or takes intoxicating drugs when at work.
10. Lets personal problems interfere with work.
11. Is (not) honest.
12. Steals company property.
32. Acts immoral.

FIGURE 31
Employer's Job-Related Behaviors List

P.	1.	Works 8 hours/day.
P.	2.	Is willing to work.
P.	3.	Will come to work even if other than regular hours.
P.	4.	Has a neat appearance.
P.	5.	Arrives at work on time.
N.	6.	Drinks intoxicating beverages or takes intoxicating drugs when at work.
P.	7.	Completes task.
P.	8.	Comes to work regularly.
P.	9.	Is polite to customers and/or visitors.
N.	10.	Lets personal problems interfere with work.
P.	11.	Is honest.
N.	12.	Steals company property.
P.	13.	Is willing to take orders.
P.	14.	Carries out orders.
P.	15.	Listens to instructions.
P.	16.	Gets along with co-workers.
P.	17.	Gets along with supervisors.
P.	18.	Follows company rules.
P.	19.	Is able to learn.
N.	20.	Is dependent on supervisor for most things.
P.	21.	Is interested in company.
P.	22.	Calls in when unable to attend.
P.	23.	Starts self on assignments.
P.	24.	Gossips about customers.
P.	25.	Smiles and/or acts cheerful.
N.	26.	Talks excessively or is noisy in quiet zones.
P.	27.	Conserves power and equipment.
P.	28.	Arranges own transportation to and from work.
P.	29.	Can work alone.
N.	30.	Interferes with the work of others.
N.	31.	Is convicted of a serious misdemeanor or crime.
N.	32.	Acts immoral.
N.	33.	Destroys company property.
N.	34.	Fights on the job.
N.	35.	Horseplays on the job.
N.	36.	Loiters on the job.
N.	37.	Takes longer than authorized rest period.
N.	38.	Intimidates or coerces fellow workers.
P.	39.	Reports breakage of machinery.
P.	40.	Keeps restroom and work area clean.
P.	41.	Wears required uniform to work.
P.	42.	Turns out quality work.
P.	43.	Keeps the quantity of production acceptable.
P.	44.	Reports accidents.
P.	45.	Obtains permission to talk on telephone.
P.	46.	Keeps all company projects confidential when need be.
P.	47.	Obtains permission to bring visitors into work area.
N.	49.	Operates machinery without being authorized.
P.	50.	Gives an honest account of his personal skills, knowledge, and work experience.

P = positively related to work
N = negatively related to work

(From Rodhouse 1977, p. 11)

Other common factors on this list deal with maintaining a positive attitude toward the employer and accepting responsibility. This study also demonstrates the importance of behavioral observation; many of the items listed on Table 11 can only be assessed by observation.

The first step in establishing a Work Behaviors and Attitudes assessment is to determine what behaviors are considered critical to sustained employment. Perhaps the most accurate way is to use the list given in Figure 31 and to have employers and first line supervisors rank the items in negative order of importance. A second method of determining work behaviors is to review the work adjustment literature. A third method is to informally talk with employers and first line supervisors. Because they deal with important vocational behaviors, job coaches, work adjustment specialists, placement specialists, and vocational rehabilitation counselors should also be consulted.

The second, and most difficult, step is to define the behaviors in terms that can be measured within the space and time restrictions imposed by the community transitional center. Let's take some examples. The first behavior on Figure 31 is "Works 8 hours/day." This is a general behavior that implies several other behaviors: physical energy to work eight hours, keeping on task for most of the day, arriving for work on time, and completing the assigned work. Because each of these contributes to the overall behavior of "Works 8 hours/day", they must be observed and measured. If the behavior in question, such as "steals company property" cannot be measured by direct observation, the evaluator should consider the use of paper-and-pencil measures of attitudes and values. The center should make two lists at this point: one containing the behaviors that can realistically be measured by observation and a second containing behaviors that cannot be directly measured.

Third, the center must decide on how they will create an environment where the chances of eliciting the to-be-observed behaviors are relatively high. In other words, the center must simulate a competitive work place. Based on the work of Lustig (1970), Dunn (1973) defined six major work setting characteristics that exist in both competitive and noncompetitive employment settings. These can be used to classify the behaviors listed on Figure 31. Some of the typical questions to be answered for each area are given as examples. The six work setting characteristics, relevant behaviors from Figure 31, and some questions to be answered are as follows:

1. Rules and Customs - This includes both formal and informal rules for all workers (clients) in the business or facility. Starting times, procedures for calling-in sick, punching the time clock, and safety regulations are examples of formal rules that employees are expected to abide by. Rules can also apply to specific jobs or work areas, such as wearing hair nets near food, or steel-toe shoes when unloading trucks. Informal customs or rules are often more difficult to determine and are often based on a period of observation. For example, customs "include such behaviors as taking breaks when machinery breaks down and smoking while working" (Messner, 1983, p. 9). Behaviors include: #3 Will come to work even if other than regular hours; #4 Has a neat appearance; #5 Arrives at work on time; #6 Drinks intoxicating beverages or takes intoxicating drugs when at work; #8 Comes to work regularly; #18 Follows company rules; #22 Calls in when unable to attend; #31 Is convicted of a serious misdemeanor or crime; and #32 Acts immoral.

   Some typical questions about rules and customs are as follows:

Does the client have the basic social skills of regular attendance and punctuality?

Does the client have the ability to accept and follow general shop rules and, especially, safety regulations?

Is the client able to adjust to informal changes in the structure of the work place?

Is the client capable of adjusting to sudden changes in work flow or pace?

2. Work Task - This involves a description of the tasks performed on each work station. While this does not mean that a formal job analysis should be done, it does require that the evaluator become very familiar with the job and know the following: level of difficulty, rate or production, duration of time necessary to complete each task, and physical demands. Behaviors include: #1 Works 8 hours/day; #2 Is willing to work; #7 Completes task; #19 Is able to learn; #23 Starts self on assignments; #42 Turns out quality work; and #43 Keeps the quantity of production acceptable.

   Some questions about work tasks are as follows:

   Does the client have the capacity to work six hours while standing?

   How does the client respond to rapid changes in job duties?

   Can the client complete a task without supervision?

   Does the client have the ability to learn a six-step assembly task?

   Is the client willing to check his/her own work for accuracy?

3. Interpersonal Situation - "The interpersonal and social situation existing at the job station must be carefully analyzed. The interpersonal situation is more difficult to untangle. Workers can interact with supervisors, co-workers in the same work area, and co-workers from different areas" (Dunn, 1973, p. 27). This category is by far the most difficult of the six areas and yet must be carefully considered. The social context of the job can be seen as the interpersonal relationship between co-workers, and between workers and supervisors. There is also a general perception of the status of the job held by others in the work place. Workers may be classified by sex, age, disability, and cultural background, and the amount of interaction required to performed. Supervisors can be classified by sex, age, technical knowledge, and leadership style. Behaviors include: #9 Is polite to customers and/or visitors; #10 Lets personal problems interfere with work; #11 Is honest; #12 Steals company property; #13 Is willing to take orders; #14 Carries out orders; #15 Listens to instructions; #16 Gets along with co-workers; #17 Gets along with supervisors; #20 Is dependent on supervisor for most things; #24 Gossips about customers; #25 Smiles and/or acts cheerful; #38 Intimidates or coerces fellow workers; and #50 Gives an honest account of his personal skills, knowledge, and work experience.

   Some questions to ask about interpersonal situations are as follows:

How does the client accept close supervision?

Can the client tolerate a job requiring constant contact with a large number of people?

Can the client accept the authority of a woman supervisor?

Is the client capable of dealing with an authoritarian supervisor?

Does the client have the social skills necessary to perform retail sales work?

4. Physical Environment - Includes the environment surrounding the job that includes the space, area, temperatures, light, sound, equipment, machines and tools (Lustig, 1970). Also to be included is the worker's physical location in relationship to co-workers, supervision, and supplies. Behaviors include: #27 Conserves power and equipment; #33 Destroys company property; #39 Reports breakage of machinery; #40 Keeps restroom and work area clean; #44 Reports accidents; and #49 Operates machinery without being authorized.

   Some questions asked about the physical environment include:

   Is the client distracted by noise?

   What combination of light intensity and background color results in the best production rate for a visually disabled client?

   Can the client work safely with power tools?

   Is the client careful with tools and equipment?

5. Time and Place - Behavioral assessment can include nonwork situations as well as production time. While the time and place of most work activities is usually set by the company's working hours and/or job location, social interaction between co-workers can happen outside the work situation, such as in the cafeteria during lunch or at the time clock while punching out. It must also be realized that some behaviors are more likely to occur at certain times and places than others. Behaviors include: #28 Arranges own transportation to and from work; #37 Takes longer than authorized rest period; #45 Obtains permission to talk on telephone; #46 Keeps all company projects confidential when need be; and #47 Obtains permission to bring visitors into work area.

   Some questions asked about time and place include:

   How does the client react to social situations during nonworking hours, such as lunch and breaks?

   Can the client use public transportation to travel from his/her residence to the facility?

   Does the client show greater fatigue in the afternoon than the morning, regardless of the activity?

6. Relationships of Behavior and Settings - The work setting to some extent controls or at least influences the behavior. Greater social interaction would be found on jobs involving several people working together rather than on a job where one or two people unloaded a truck. Behaviors include: #21 Is interested in company; #26 Talks excessively or is noisy in quiet zones; #29 Can work alone; #30 Interferes with the work of others; #34 Fights on the job; #35 Horseplays on the job; #36 Loiters on the job; and #41 Wears required uniform to work.

   Some questions asked about relationships of behavior and settings include:

   Does the client's production rate vary greatly according to the type of supervision?

   How is the need to socialize with peers effected by tasks where he/she works by him/herself? With others?

   Is the client's ability to perform complex assembly tasks related to the amount of visual and auditory distraction?

   Is the client able to work safely given his/her present level of medication?

Some Instruments - After the behaviors have been defined and the center has decided what they intend to measure, the center must decide what instruments to use. This selection is critical because the center is attempting to complete in a short period of time what a traditional rehabilitation facility often takes weeks to determine using situational assessment. For this reason, the transitional center may not be able to provide the in depth assessment required by clients with severe, yet hidden, vocational behavior problems. Because time is a critical factor, the evaluator will want to select measures capable of measuring a variety of behaviors at the same time. The following instruments should prove useful:

1. Valpar #8 - Simulated Assembly

   Purpose - "...measures a person's ability to work at an assembly task requiring repetitive physical manipulation..." (Valpar International Corporation, 1974c). In this work sample the client assembles pins and plastic parts on a slowly rotating wheel; these are automatically recircled. There is no social interaction between clients.

   Times - The evaluator can determine the amount of time to be spent on the work sample.

   Recommended Client Group - All persons except those with severe upper extremity manipulative and/or range of motion problems should be able to take the work sample.

   Behaviors Measured - Because this work sample requires that a person work alone and because the evaluator can control the speed and length of time of the task, this work sample is useful in determining the work behaviors that can be measured in relative isolation. Many of the work task behaviors (e.g., Works 8 hours/day and #2 Is willing to work) could be measured. The work sample could be placed in a simulated setting, such as one with noise or poor lighting, to

determine how well the client could function with distractions and under varying conditions.

Available from - Valpar International Corp.

2. Valpar #14 Integrated Peer Performance

Purpose - This work sample requires three or four persons to engage in an assembly task of varying difficulty. The evaluator (or another client) acts as the inspector. All persons are closely seated around a revolving table that contains the simulated assembly.

Times - The time is largely dependent on the needs of the evaluator. If desired, clients could spend several hours at these tasks.

Recommended Client Group - The work sample can be administered to all clients with upper extremity range of motion and dexterity.

Behaviors Measured - Many of the Interpersonal Situations (e.g., #16 Gets along with coworkers; #10 Lets personal problems interfere with work; and #38 Intimidates or coerces fellow works) can be observed. Some of the Work Task behaviors could also be measured: #7 Completes task; #19 Is able to learn; #43 Keeps the quantity of production acceptable. This work sample can be used to assess some of the client's reaction to supervision and to working closely with others.

Available from - Valpar International Corp.

3. Philadelphia JEVS #20-Grommet Assembly

Purpose - The original purpose of this work sample was to measure eye-hand-foot coordination and manual dexterity. The client uses a foot operated decide to compress the grommets so that a rubber ring can be removed.

Times - This work sample can be completed in 20 minutes or less. Scoring should take less than one minute.

Recommended Client Group - Requires the full use of both hands, and coordination to stand on one foot while operating foot controls.

Behaviors Measured - The behaviors measured are more related to work rhythm and stamina than to the six areas given above. However, the Grommet Assembly could be related to: #7 Completes task; #15 Listens to instructions; #29 Can work alone; and #43 Keeps the quantity of production acceptable.

Available from - Vocational Research Institute.

In addition to the three work samples highlighted above, other work samples provide basic measures of some of the behaviors given on Figure 31. If the evaluator is using simulation to measure these behaviors, it should be remembered that the physical and social conditions of the work site must be simulated. This is often difficult. Many individual work samples in the following systems can be used to measure the above mentioned behaviors: Valpar Component Work Sample Series, Philadelphia JEVS Work Sample System, Vocational Information and Evaluation Work

Samples (VIEWS), and Vocational Interest Temperament and Aptitude System (VITAS.)[14]

In a relatively short period of time, it is difficult to observe many of the behaviors listed above. The next best way of determining behaviors is to look at attitudes, values, and opinions that underlay behavior and, therefore, should predict behavior. The use of such measures can raise ethical problems, especially when an attitude may be a consideration in hiring a worker. Here the transition center will have to decide as a matter of policy the extent to which potentially intrusive tests will be used, how they will be used, and how the results will be reported to employers and other third party sponsors.

Several potentially useful tests are given below. Although these were selected to be administered, scored, and interpreted by evaluators with less than an doctorate in psychology, counseling or a related field, it might be a good idea to have a licensed psychologist periodically review the use of such tests:

1. Employee Attitude Inventory

   Purpose - Identifies employees who might steal or engage in intentional damage. Used as assessment of honesty.

   Times - Untimed, group administered, approximately 30 minutes. Computer scored.

   Recommended Client Group - This self-administered test is designed for adults. Oral administration to illiterates is possible.

   Scales - Theft admissions, attitudes and suspicions, drug-abuse tendencies, and job dissatisfaction and burnout.

   Available from - London House Press

2. Hall Occupational Orientation Inventory (Hall)

   Purpose - To help clients move towards making occupational decisions in terms of inner values, needs, beliefs, abilities, and interests that the client feels are important.

   Times - Untimed, administered to individuals or groups in from 20 to 30 minutes. Hand scored by client in about 30 minutes.

   Recommended Client Group - Three separate forms are available: Adult Basic Form, Young Adult/College Form and Intermediate Form. Adult form has a third or fourth grade reading level.

   Available from: Scholastic Testing Service, Inc.

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[14] VIEWS and VITAS are available from the Vocational Research Institute.

3. How Supervise?

   Purpose - Measures a supervisor's knowledge of human relations in the work place.

   Times - Untimed, individual or group administered in about 40 minutes; hand scored in about 10 minutes.

   Recommended Client Group - Persons applying or interested in first line supervision jobs.

   Scales - Supervisory practices, company policies, and supervisory opinions.

   Available from - The Psychological Corporation

4. Minnesota Importance Questionnaire (MIQ)

   Purpose - Assess values found relevant to work adjustment, especially to satisfaction with work.

   Times - There are two separate forms. The paired form is completed in 35 minutes; the ranked form in about 20 minutes. Both are untimed and can be administered either individually or in groups. Computer scoring suggested.

   Recommended Client Group - All groups over age 16; a fifth grade reading level is required.

   Scales - Twenty psychological needs (e.g., ability utilization, achievement, authority, company policies, security, social service and working conditions) and six underlying values. The score profile is compared with the scale scores of various occupations.

   Available from - Vocational Psychological Research, University of Minnesota

5. Sales Attitudes Checklist (SACL)

   Purpose - To identify potentially successful salespersons and to measure sales attitude and habits.

   Times - Untimed individual or group administered in about 15 minutes. Hand scored in about 10 minutes.

   Recommended Client Group - Adults or high school students, both males and females; fifth to eighth grade reading level required.

   Scales - One scale on sales attitude.

   Available from - Science Research Associates

In summary, work behaviors and attitudes are among the more difficult variables to be assessed by the community center. The most practical approach appears to be to use a combination of simulated (i.e., situation assessment) employment settings and paper-and-pencil tests of attitudes, behaviors and values.

Vocational Analysis

Vocational analysis is a process of determining a client's residual functioning level following an accident, injury or illness. Vocational analysis almost always occurs in connection with litigation, such as Social Security Disability Insurance, worker's compensation or personal injury claims. The purpose is often to determine the client's level of functioning before the traumatic event and to compare that with present functioning level. The difference between present and past level is used as the vocational basis for a settlement in worker's compensation and personal injury. Social Security Disability Insurance is different in that it requires that the client prove that he/she is totally disabled from performing any job in the national economy. The usual final result of a vocational analysis is a carefully written report containing detailed statements of the client's present level of functioning and the impact of that functioning level on the availability of jobs. Quite often a transferrable skills analysis is performed to find suitable employment.

When the center is asked to perform a vocational analysis, it is often being asked to take sides in a legal matter. The center should be aware of this fact and react accordingly. The report will be used as evidence by the organization hiring the center to provide the vocational analysis. This means that methods used to collect the information and the accuracy of the analysis are open to public scrutiny and critical review. In these instances, the final report is to be viewed as the major product of the service. This final report must as clear, concise, carefully worded, and accurate. More will be said about the report in the paragraphs below.

Methods of Obtaining Information - The above paragraphs stated that vocational analysis compares past and present levels of functioning. This means that you have to determine past and present levels of functioning. Before this can be accomplished, however, the evaluator must have complete information on the client as a person and as a worker. This information usually comes from two sources: (1) Medical and/or psychological records and (2) an in-depth interview with the client. The medical history should be provided by the referral source prior to seeing the client. Make certain that you have a complete history and review it carefully before seeing the client. If information appears to be missing, check this out with the referral source. Because the evaluator most likely will not have the time and the necessary release agreements, the task of obtaining medical and psychological history should be performed by the referral source.

The second way is to obtain as much information about the client as possible during an interview. The Initial Interview Form (Appendix A) was developed in part to obtain information to be used in vocational analysis (Botterbusch, 1983c). This lengthy interview form requires between 1 1/2 and 2 1/2 hours to complete. Although the major sections of the interview form are largely self-explanatory, some comments are needed for each section:

1. Personal History - The first section contains a short family history section. This is important when dealing with clients whose condition may have been partially due to heredity. Present marital status is asked largely to determine the number of dependent children; this may effect the amount of compensation sought. The financial section is an attempt to gain insight into the client's financial condition; this may be influential to his/her desire to settle a claim.

2. Educational History - This section attempts to determine the client's general level of education as well as specific vocational training. When interviewing the client, go beyond recording names and dates of education. Ask if the client was in special education classes and what type of grades he/she had in school. With regard to vocational training, determine exactly what job(s) the training was for and what licenses the client has. The final section deals with present functional literacy skills; these may not reflect the client's stated level of formal education. Finally, if achievement tests are given, record the test name and edition, the raw scores and the grade equivalent.

3. Employment History - More than any other single factor, the employment history determines the client's level of functioning before the disabling event. The evaluator should carefully record the company, dates, and job title. Go beyond the job title and determine what tasks were actually performed on the job. These tasks will be related to a specific DOT job; the Work Fields and MPSMS codes (Botterbusch, 1983b) associated with these codes will form the basis for the transferrable skills analysis. Next, determine the wages or salary; these will be the basis for a loss of earning estimate. The physical demands of the jobs will help decide the issue of whether or not the client can return to one of his/her former occupation(s). If the client is presently employed, describe the job tasks and record the wages and find out what, if any, special considerations have been made. These data will be used to estimate if the client is performing in a diminished capacity as a result of his/her vocational disability.

4. Medical History - Unlike other aspects of the Initial Interview Form, medical history can be obtained from sources other than the client. Prior to interviewing the client, obtain and carefully review the medical history provided by the referral source. Make notes on this history so that after the interview the medical history can be compared with that given by the client. In addition to obtaining accurate information on present and past medical conditions, obtaining medical history from the client will provide two insights: (1) It will provide the evaluator with information on how the client perceives his/her medical condition, especially in terms of any restrictions in activities, and (2) the client may be able to point out significant treatments or visits that were not in the medical records. If this occurs, the evaluator should contact the referral source with this information. In addition to medical problems, the evaluator should question the client about any psychological problems. These questions should be asked in a simple, direct manner. Even if there is no record of psychological problems, the evaluator should ask the client about depression and the presence of alcohol and drug abuse. Several researchers (Harp and Altmaier, 1982; Task Force on Psychology and the Handicapped, 1984; Pelletier et al., 1985; and Greer, 1986) reported that alcohol and drug abuse among disabled persons is much higher than it is within the normal population. Next medical history section asks about prescription medication. Record the name of the drug, the dosage and the purpose. If needed, check the spelling and purpose with the most recent edition of the Physicians' Desk Reference (PDR). The PDR will also provide valuable information on potential side effects that may have vocational ramifications. The final part asks for physician's restrictions. Because these are often directly related to the residual physical capacities assigned to the client, this information must be gathered with great care; the results must be compared with the medical records.

5. Present Activities - The purpose of this section is to determine how the person presently functions. This information can be related to physician's restrictions and residual functioning capacities. The purpose of the first several questions is to determine what the person is presently doing and to compare this to what he/she did in the past. When questioning the client not only ask him/her about the performance of simple duties, but also ask him/her about the amount of time that it takes to perform a duty (e.g., washing dishes takes one hour because he has to sit after 15 minutes of standing) and if other persons assist with the task. The last sections of the Present Activities require a self-description of medical problems and physical capacities. These two areas permit the client to provide information on how he/she feels and what he/she says they can do. Because it is subjective, the client's descriptions should be collaborated with objective medical evidence; they should hardly ever be taken at face value. The reader should note that the physical capacities section of the form was designed to provide information that could be translated into the physical demands classification used in the Handbook for Analyzing Jobs.

During this interview the evaluator should take the opportunity to observe and record behavior. Some of these behaviors are listed on the last page of the Initial Interview Form:

1. Dress and Grooming - Record what the client wore in terms of appropriateness, extreme style, and condition. Cleanliness, hair and/or beard care, odors, and makeup should be recorded.

2. Speech Patterns - Record the type of speech used. Does the client speak in complete sentences using correct grammar? Are there any speech defects (e.g. stuttering) noted? Can the client be easily understood?

3. Recall - This relates to the client's ability to remember past names, dates, and events. Because social, educational, and employment history are largely dependent on recall, this is a critical behavior.

4. Physical Symptoms Displayed - Many clients display pain or other symptoms during the interview. Both their occurrence and the time of occurrence should be recorded. For example, the client may change positions in the chair frequently, stand, support lower back with his/her hands, and make verbal and facial expressions of pain.

5. Psychological Symptoms Displayed - Some clients display anger, hostility, aimed either at the evaluator, insurance company, etc. Does the client overreact emotionally to questions about medical problems or employment history? Does the client cry or attempt to gain sympathy? When recording physical and/or psychological symptoms, record only the observations and do not attempt to make a diagnosis.

Determining Past and Present Level of Functioning - The next step is to develop two complete pictures of the client: (1) how he/she functioned before the traumatic event, and (2) how he/she presently functions. There is almost always a loss of functioning between the first and second picture. This loss is characterized as reduced earning capacity and is based on the client's residual functioning capacity.

Because the past level of functioning is usually determined by the client's occupation at the time of the accident or illness, it is necessary to determine exactly what the client did in his/her jobs. Using the information collected on the Initial Interview Form, the evaluator determines the most appropriate DOT occupational titles for each job in the client's work history.[15] When the evaluator has determined the DOT title and code for the job, he/she then must determine the highest level of functioning. This is commonly performed by taking the aptitude, GOE and other levels of functioning required on the previous job and then developing a profile of the highest functioning levels. This can be done either by hand or computer. The most common hand process is the VDARE process (Field and Sink, 1981). Briefly, the aptitudes, GOE, physical demands, environmental conditions, temperaments, and interests for each occupation in the client's relevant work history are compared in the highest level of functioning recorded. For example, the Spatial Aptitude for four occupations is:

DOT Title and Code	Spatial Aptitude
Thermal-Cutting-Machine Operator (816.482-010)	3
Thermal Cutter, Hand (816.684-010)	4
Welder-Fitter (819.361-010)	2
Welder, Production Line (819.684-010)	4

The highest level of functioning for the Spatial Aptitude is a "2", in the upper third of the population, excluding the upper 10%. The ratings of 3 and 4 are average or below the average.

Once the highest functioning profile (i.e., worker trait profile or worker qualifications profile) is found in this manner, the evaluator has a hypothetical profile of the client's highest functioning level. At this point, the evaluator can compare this profile with the employment opportunities that in theory existed before the traumatic event. In addition, the evaluator will also want to compare the client's pre-event wage levels with wages or salaries of jobs that the client can presently perform.

The second determination is how the client functions at present. This can be done in several ways. The first and the best is have the client undergo the Literacy, Aptitude/Skills, Physical Demands, and Work Behaviors and Attitudes Assessments described above. This should result in a worker trait profile that is representative of the client's present functioning level. This approach is much more accurate and highly defensible. In the second method, the evaluator uses the client's worker trait profile derived from the job history and modifies this profile to match present conditions. For example, a client with a low back injury with Heavy jobs in his work history would be given a Light or Sedentary rating. The rest of the worker trait profile would not change. Changes in aptitude and GED levels sometimes will occur. Many of the computerized job matching systems (i.e. DataMaster, JOBS, VIPS, OASYS and VARS) operate in this manner. A third way is to use a combination of medical records, the client's self assessment, and evaluator's subjective estimates of the client's characteristics. Although this process is widely used, it is too open to bias and, therefore, is not recommended.

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[15] Social Security Disability considers jobs held during the last 15 years as relevant; there are no set rules for other claims.

The next step is to compare the client's vocational assets before the event with present vocational assets. The difference is often expressed as a percentage of earning or as a percentage of vocational disability. There are several approaches to this problem:

1. Determine what percent of the national labor market was open to the client before the event and compare that with the percent of the national labor market presently open.

2. Determine the client's income based on his/her last job and compare that with the estimated income based on diminished capacity. The difference between the two is the estimated vocational disability.

3. Determine what specific jobs within the local economy the client could perform prior to the disabling condition and what jobs he/she could presently perform.

4. Determine if the client has any skills that can be transferred into other occupations, commonly requiring less physical demands.

5. To determine if the client is totally disabled (i.e., unable to perform any competitive job in the national economy) the evaluator must prove that the client is not able to perform unskilled sedentary jobs. In order to prove this, severe medical and/or psychological functional losses must be present.

These five methods for determining vocational loss can be used in a variety of situations. However, they all require access to accurate labor market and other vocational information. If the community transition center provides a vocational analysis service, then they must have current and accurate information. Much of these data can be obtained from Employment Service records and others from commercial sources.

The Use of Job Matching Systems - At present there a variety of computerized job matching systems that can be used as part of a vocational assessment program. At minimum, a system should have two important features: (1) the ability to develop a local data base, and (2) the use of a transferrable skills program based on Work Fields and MPSMS. Regardless of the system used, the evaluator begins with a profile that, depending on the system, may be calculated directly from a client's employment history. The evaluator then modifies this profile to reflect present conditions. If desired the evaluator can make several searches of the data base in order to determine the effects of various restrictions on physical demands and/or other variables.

The selection of a computerized job matching system requires that numerous decisions be made. These considerations are discussed in detail in Botterbusch (1986) and need not be repeated here. Some of the job systems that meet the two features mentioned in the paragraph immediately above are:

1. Job Opportunity Based Search (JOBS), available from PESCO.

2. Occupational Access System (OASYS), available from Vertek

3. ValSEARCH series, available from Valpar International Corp.

4. Vocational Information Processing System (VIPS or AIS), available from Ability Information Systems.

Reporting - The last process in a vocational assessment is to prepare a report. If the report is based on the information obtained from the Initial Interview Information form, the major headings of this form (e.g., personal history, vocational history, and medical history) become the report headings. In other community transitional center programs described in this book, the main product is usually information provided directly to the client or the referral source or some type of behavioral change in the client. The vocational analysis is different in that the report is the final product. Because this report will often be used to decide one or more legal issues, it must be carefully written and based on the advice given in Thomas (1986).

Before writing this report, the evaluator should carefully review all information collected from the client and about the client. When writing the actual report, attempt to present an accurate picture of the client's vocational strengths and weaknesses. While some vocational experts have knowledge of medical conditions and can interpret some medical reports, the evaluator should be very careful when interpreting medical information. It is much better and safer to use the physician's residual functional capacities than to make an independent interpretation of X-rays or surgical reports.

Most reports end with a conclusion section that gives the percentage of vocational disability, lists some jobs for which the client may qualify, and summarizes the client's vocational limitations. This section must be carefully reasoned and the steps used to reach the conclusions must be clear. Write this section as if you expect to be cross-examined in court about your reasoning, data sources, decisions, and findings.

Psychological Assessment

Because the community transitional center needs to serve a wide variety of persons, psychological assessment and evaluation should be included as a basic service. There is, however, a difference between this service and other services provided by the center. Most states require that a licensed psychologist administer, score, and interpret certain tests. Although the psychologist and evaluator do have separate roles, functions, and knowledge, these two professionals often work to gather information about the client and to report it to the referral source (Beley and Felker, 1981). Within the concept of the community transition center, psychological assessment can either be performed as a separate service or in combination with other assessment services. It must be pointed out, however, that the psychologist's role within the community center is primarily one of assessment; there would be little room for individual and group therapy.

Typically the psychological assessment includes an interview combined with a series of individually administered tests. The most common types of assessment will be mental status examinations and intelligence testing. Since both of these assessments often have legal ramifications, they must be given with considerable care and skill. The content of the interview, the tests administered, and the content of the report depend largely on the purpose for the referral. If the referral source only wants an estimate of intelligence, then the psychologist would limit him/herself to that question. Although many psychological assessments include determining the client's academic achievement level, basic aptitudes, and interests, these assessments would be provided by the evaluator and the results given to the psychologist for

inclusion in his/her report. In order to reduce costs, the evaluator should perform all testing except those the psychologist must perform by law.

Intelligence and personality are the two most common assessments performed by the psychologist. The most commonly administered individual intelligence test is the Wechsler Adult Intelligence Scale-Revised (The Psychological Corporation). The WAIS-R is an untimed individually administered test that can be administered in about one hour to persons over age 16. It contains 11 subtests that are combined into three final scores: Verbal IQ, Performance IQ, and Full-Scale IQ.

> The Verbal IQ measures an individual's ability to express himself verbally, think abstractly, and utilize information gained from previous experience. The Verbal IQ is derived from six individual subtests...Information, Comprehension, Arithmetic, Similarities, Digit Span, and Vocabulary...
>
> The Performance IQ provides an assessment of an individual's ability to coordinate what he sees with what he does. This has often been termed visual-motor coordination or eye-hand coordination. Motor speed and accuracy are therefore factors to be evaluated when determining intellectual ability. The Performance IQ is derived from five subtests that are timed...Digit Symbol, Picture Completion, Bock Design, Picture Arrangement, and Object Assembly...
>
> The Full Scale IQ is a combination of both performance and verbal abilities... The Full Scale IQ is an average of the Verbal and Performance IQs... and is intended only to give a comprehensive estimate of the person's overall level of intellectual functioning. Full Scale IQ's indicate a person's general intellectual abilities, as compared with the abilities of others who are approximately his own age. (Kluge and Owre, n.d., pps 2-4)

Depending upon the skill of the psychologist and the liberties he/she wants to take with interpretation, other non-intellectual information can also be obtained from this test.

Although the WAIS-R is by far the most popular method of determining intelligence, other tests are used. The older Stanford-Binet is much more difficult to administer than the WAIS, but provides a more accurate measurement of mental retardation at the lower end of the scale. Another test is the Advanced Progressive Matrices (The Psychological Corporation), used to assess the "mental ability of persons with above average intellectual ability by means of nonverbal abstract reasoning tasks" (Sweetland and Keyser, 1986, pps. 19-20). This test can be used to assess the abstract reasoning ability of persons scoring poorly on the WAIS-R Verbal Scale. Another often used test is the Shipley Institute of Living Scale (Western Psychological Services). This "test consists of two parts, a group of 40 multiple-choice vocabulary items and a set of 20 open-ended series that require the person to abstract a rule with which to determine the next element in that list" (Johnson, 1986, p. 425). Although the review by Johnson (1986) cautions against its overuse, many psychologists use the Shipley to assess the deterioration of intelligence in mentally ill persons.

When assessing personality through non-projective techniques, three of the more commonly used tests are: the Minnesota Multiphasic Personality Inventory (National Computer Systems, Inc.), Myers-Briggs Type Indicator (Consulting Psychologists Press), and the Sixteen Personality Factor Questionnaire (Institute for Personality and Ability Testing). The very popular MMPI is designed to provide a personality assessment on

ten bi-polar scales: Social Introversion, Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Masculinity-Femininity, Paranoia, Psychasthenia, Schizophrenia, and Hypomania. Three additional measures were designed to estimate the validity of the clinical profile: Lie Scale, Infrequency, and K Scale. A summary of the uses of the MMPI is as follows:

> Though it was designed merely to provide psychiatric diagnoses, its applications have ranged far beyond this limited role. A plurality of administrations are doubtlessly done in psychiatric hospitals, mental health clinics, college counseling centers and similar agencies. In those settings, the MMPI is usually part of a test battery that yields a report of patient symptomatology, diagnosis, and prognosis... (Levitt and Duckworth, 1984, p. 469)

The Myers-Briggs Type Indicator is intended to measure personality types according to Carl Jung's theory of consciousness type; there are four independent dimensions: Extraverted-Introverted, Sensation-Intuition, Thinking-Feeling, and Judging-Perceiving (Myers, 1982). This test can be used to relate how the client views the world to general types of jobs and to types of training. It is also considered by some to be an excellent tool at the beginning of counseling. The final suggested personality test is the Sixteen Personality Factor Questionnaire (16PF). This objective test is appropriate for a wide range of persons and provides measures on 16 scales: Warmth, Intelligence, Emotional Stability, Dominance, Impulsivity, Conformity, Boldness, Sensitivity, Suspiciousness, Imagination, Shrewdness, Insecurity, Radicalism, Self-sufficiency, Self-discipline, and Tension. There are also second order scales. "The 16PF is available in five forms requiring an administration time of 30-60 minutes, depending on the form" (Wholeben, 1985, p. 596).

The final test to be discussed, the Bender Visual Motor Gestalt Test (American Orthopsychiatric Association, Inc.), does not fall neatly into either the intelligence or personality category. The test "assesses the visual-motor functions of individuals ages 3-adult" (Sweetland and Keyser, 1986, p. 36). Of the three general uses described by Whitworth (1984), two are relevant to the transition center: (1) a neuropsychological screening test for brain damage, and (2) detecting emotional and psychiatric disturbance in children and adults.

Report Writing - Information obtained from tests, interviews, and written information are usually combined into a final report. The basis for this report is the referral questions or the information requested by the referral source. As with all report writing, the psychological report should be well-organized and should separate objective results from interpretation of the findings. Although the report content will vary with the reason for referral, the following is a general format:

1. Reason for referral - Give the reason why the community center is performing this service for the client.

2. Description of Client - Many psychologists include a physical description of the client and a description of how he/she responded to the psychologist and to the testing material.

3. Social History - If included, social history is obtained from the client. It includes place of birth, family conditions, significant events in the client's life, and present living conditions.

4. Education - If included, the highest grade completed, vocational training, grades in school, and any special education classes should be briefly discussed.

5. Test Results - This is an objective description of how the client performed on the administered tests. Although scores and client behaviors during testing are included, interpretation is left for another final section. This section can be subdivided by the type of tests administered (i.e., intelligence and personality)

6. Synthesis and Recommendations - The interpretation of test results and other information is the heart of this last section of the report. The report also includes recommendations based on the referral questions. Some of the most common recommendations are: further training, physical or psychological treatment, additional assessment or evaluation, and neuropsychological assessment. In some cases, the psychologist will estimate a percentage of disability.

This part has briefly identified some of the items to be included in a psychological assessment. Because most of the psychologist's duties deal with test administration, this section dealt largely with the most common tests used in psychological assessments.

Packaged Complete Assessment

The community transitional center provides specified services to determine the client's functioning level on a variety of fairly discrete variables, such as physical demands, literacy, and aptitudes. If several of the services discussed above were combined, the result would be a fairly accurate vocational picture of a person. These services would also provide detailed information that could be used for hiring, career planning, vocational counseling, and other vocational related purposes. There are, however, times when all that is required is a quick screening of a person's abilities, aptitudes, and interests. When this is all that is needed, the center could use one of the several commercially available assessment systems (e.g., Apticom, CES, KEVAS, MESA, and SAGE). These systems are capable of providing a rough screening for use in vocational counseling, hiring semi-skilled and unskilled employees, and for some persons returning to the labor market.

The reader will note that many of the assessment services described above are based on standard psychological tests and work samples that have been used for years; many of these instruments have known validity. Because the standardized assessment systems do not, as yet, have this record of validity, they must be used with considerable care (Botterbusch, 1985b; Botterbusch, 1987). For this reason, the complete vocational assessment batteries available at this time should be used with considerable caution.

At present five systems can be used for a quick assessment of a clients abilities: Apticom, Career Evaluation Systems (CES), Key Educational Vocational Assessment System (KEVAS), Microcomputer Evaluation and Screening Assessment (MESA), and System for Assessment and Group Evaluation (SAGE). These systems have several common aspects. First, each system was designed to be administered to small groups in the span of a few hours. The major motivation of the developers of each system was to obtain the most accurate, objective vocational data about the client in as

short a time as possible. In order to achieve this purpose, these assessment systems (with the exception of CES 's Series 200/230 and 300) are not intended to be used with severely disabled persons. The MESA, for example, was designed for the middle 80% of the population.

Second, traditional work samples are not used. These assessment systems are typically a combination of paper-and-pencil tests and isolated trait assessments. Parts of the Apticom and MESA are computer administered and scored. As a result, these assessments provide little opportunity for the type of behavioral observations needed to assess many work relevant behaviors.

Third, the instruments are usually scored and reported in terms of number of correct responses; error scoring is not used to a large degree. This type of scoring is typical of psychological tests. Fourth, because of the emphasis on time and objective data, none of the instruments provide any subjective information to the client. In other words, the client obtains little insight into his/her abilities from completing an assessment battery, nor does he/she gain any occupational information. These four common aspects are simply differences between traditional vocational evaluation practices and assessment; they are not necessarily criticisms of assessment batteries.

Open and Closed Systems - These assessment systems can be classified according to their output. Apticom, MESA, and SAGE provide results using the Worker Trait Group variables (e.g., GED, aptitudes, and GOE interests) that can be used as input to other systems. These open systems use of standardized variables permits an easy interface with computerized job matching systems, and some occupational exploration materials.

Because CES and KEVAS provide the evaluator with a final report that contains selected specific job titles, these systems can be considered as closed systems. With these systems there is no need to perform the extra step of using the results to find occupations for which the client may qualify. Because their data bases of jobs are beyond the control of the evaluator, he/she cannot enter occupational titles that are relevant to the local economy. Both systems measure a combination of isolated traits (e.g., Precision Aiming and Depth Perception) and abilities (e.g., Abstract Reasoning and Reading Comprehension) and combine these traits into factors that relate directly to jobs. In other words, they do not use the Worker Trait Profile variables. The final reports for these two systems provide scores on the tested traits and then go on to list specific jobs that the client is able to perform. CES is unique in that it uses a "fuzzy logic" approach in which probabilities for success are assigned to each job selected (Williamson, 1986). Thus, the potential user has two different approaches to choose from when attempting to choose an assessment system.

In choosing between these two types of assessment systems, the transition center must decide if it wants an open or closed system. The advantage of a closed system is that the entire process of scoring and job selection is performed for the evaluator; interpretation of the results is often easier. In addition, occupational exploration and vocational counseling is sometimes facilitated with a concise system. In an open system the evaluator is free to take the assessment results and use them directly for counseling and placement or enter them into a computerized job matching system to search for national and possibly local jobs. Although this requires considerable more evaluator's time, the evaluator has control over the process. Because the Apticom provides the results in Worker Trait Group variables and yet yields a final report containing specific jobs classified by GOE codes, it combines some of the features of both a closed and open system.

A Brief Description of Some Assessment Systems - The five assessment systems discussed above are briefly described as follows. Additional discussion and more detailed information can be found in Vocational Evaluation and Assessment Systems: A Comparison.

1. Apticom

   Purpose - To provide a quick vocational assessment of aptitudes, interests and educational levels.

   Times - The entire battery can be completed in 1 and 1/2 to 2 hours. Separate sets of equipment needed for each client.

   Recommended Client Group - English or Spanish speaking disadvantaged job applicants, high school or special education students, and rehabilitation clients.

   Scales - Measures 10 of the 11 Labor Department Aptitudes (G, V, N, S, P, Q, K, F, M, and E); GED Mathematics and Language levels; and GOE interests.

   Available from: Vocational Research Institute

2. Career Evaluation System (CES)

   Purpose - To assess the functioning level of a wide variety of client groups.

   Times - The times vary with the system: Series 100 - 3 1/2 hours to 12 persons; Series 200/230 - 4 hours with paper-and-pencil tests given to small groups; Series 300 - 4 hours with small groups.

   Recommended Client Group - Series 100 - normal population, ages 16 to 65 for selection and training in business and industry. Series 200 - physical, sensory and/or psychological handicaps; Series 230 subset - disabled persons with low reading levels. Series 300 - mentally retarded persons.

   Scales - A total of 28 tests (number of tests differs with Series) measures the Data, People, and Things hierarchies. Physical demands and environmental conditions are also considered.

   Available from - Career Evaluation Systems

3. Key Educational Vocational Assessment System (KEVAS)

   Purpose - To "tap the basic elements of psychophysical functioning, that is, those underlying perceptual skills which are fundamental for learning" (Key Education Inc., 1986, p. II-1).

   Times - Sessions run between 2 1/2 and 3 hours. If two sessions are held during the day, between 16 and 20 clients could be assessed by two evaluators in one day.

   Recommended Client Group - "Normal" populations, including high school students, dislocated workers and competitively employed adults.

Scales - Twenty measures are classified into three general groups: psychophysical functioning, work-related competencies, and attitudinal and motivational measures.

Available from - Key Education, Inc.

4. Microcomputer Evaluation and Screening Assessment (MESA)

Purpose - To produce a Worker Trait Profile for the client or student.

Times - Administered to between one and four people in four hours.

Recommended Client Group - A screening device to be used with the middle 80% of the population. The system has application to many groups: high school students, a general vocational rehabilitation population, vocational-technical students, prisoner, and manpower trainees.

Scales - Complete Worker Trait Profile GED, Aptitude, Temperaments, Interests, Physical Demands, Environmental Conditions and SVP.

Available from - Valpar International Corp.

5. System for Assessment and Group Evaluation (SAGE)

Purpose - To assess traits in the Worker Trait Profile.

Times - Several persons can complete in about four hours.

Recommended Client Group - Junior and senior high school students and those in post-secondary education. Useful with disadvantaged and some handicapped groups.

Scales - The following Worker Trait Profile variables: GOE codes, Aptitudes, GED, and Temperaments. Work Attitudes are also assessed.

Available from - PESCO

In conclusion, the community transition center should consider offering a packaged vocational assessment program. Unlike the other programs described in this chapter and the next chapter, the packaged assessment program depends on the purchase and use of one of the commercial systems described above.

CHAPTER 6

Referral and Placement Services

As indicated at the beginning of Chapter 5, the community transitional center provides two kinds of services: (1) assessment and (2) referral and placement services. Chapter 5 described a variety of assessment services offered as separate services or as components in a series of assessments. Chapter 6 describes a variety of non-vocational assessment services, ranging from computerized job matching to living skills assessment. Unlike the assessment services that would often be used in combination with each other, the services described in this chapter would be used more independently from each other. This chapter describes five services: Occupational Exploration, Job/Training Matching, Job Seeking Skills, Vocational and Educational Counseling, and Living Skills Assessment.

The Referral and Placement Services meets client needs for short-term specific programs having the general goal of increased awareness and independence. Occupational Exploration and Job/Training Matching services are intended to provide two ways of reducing the range of occupations initially determined to be feasible to a manageable number of realistic alternatives. These services assume the input of current, accurate data on the client's functioning level, such as what would be obtained from the various Assessment Services. The Job Seeking Skills program provides the client with specific strategies of searching for a specific job. The Vocational and Educational Counseling service will be used when the client is unable or unwilling to make a choice on his/her own, for whatever reason(s). Finally, the Living Skills Assessment service assumes that persons need to function within a community not only during working hours. The goal is to have persons reach economic and social independence.

Occupational Exploration

Occupational exploration is intended to offer the client information and limited "hands-on" experience to enable the client to: (1) find objective information about jobs and careers and (2) enable the client to make subjective decisions about what he/she likes and dislikes. This definition implies that the client should be exposed to both print and non-print media as well as some materials requiring the performing of tasks (i.e., work samples). It also makes clear that the major reason for undergoing occupational exploration is for the client find out factual knowledge about occupations

and to use this knowledge to determine his/her vocational preferences. Thus, occupational exploration is largely a subjective process by the client using objective information.

In order to establish a occupational exploration program the community transitional center must deal with two main dimensions: (1) the information and experiences that are provided and (2) the way this information is organized. The information provided the client must be carefully selected by the center staff. This selection process requires that the evaluator first obtain occupational information materials and second that he/she decide what should be included. The next section provides information on sources of materials; the section following that will present standards for judging occupation material. Two methods for organizing the material will be presented. Finally, the use of this information will be considered.

Sources of Occupational Information - Although there are many commercial and non-commercial sources for occupational information, the most important considerations are that the information be accurate and current. Accuracy refers to presenting the occupation or small cluster of related occupations honestly as they exist is the working world. Here the evaluator or counselor should ask if the information presented describes the job in realistic terms. Are both the positive and negative points given equal weight? Are the number of expected openings accurate? Is the job "glamorized"? Is the job presented in terms of typical tasks and common duties and not in terms of occasional spectacular work activities? If the job exists locally, does the information relate to local employment conditions? These are some of the questions that need to be asked when reviewing commercial materials or when developing local occupational information.

The second consideration is the need for current knowledge. Occupational information must keep up with the current trends in both national and local economies. For example, the reduction in manufacturing jobs and the increase in business and personal services must be reflected in the occupational information. In order to insure current information, check the copyright dates of all publications and media. Look for changes in wages or salary, work methods, occupational outlook, and even dress in media presentations.

With these two considerations in mind, let's consider some specific sources of occupational information:

1. U.S. Department of Labor Publications - These are the primary source of much occupational information.

   Dictionary of Occupational Titles (Fourth Edition) - Although about ten years old, this document includes descriptions of 12,098 occupations (DOL, 1977). The two Supplements (DOL 1982b; DOL 1986) contain over a thousand additional occupations. These publications provide general definitions for most jobs in the national economy. Because the information in the DOT is written in job analysis format, most clients will not be able to read and use the DOT without considerable assistance. Just as important as the information contained in the documents is the classification system of Occupational Group Arrangements (OGA's) and the Data-People-Things (DPT) codes. These codes can be used to classify any job in the national economy. (The DOT and Supplements are available from the Superintendent of Documents.)

Guide for Occupational Exploration (Second Edition) - This publication classifies all jobs in the DOT into 12 major interest Areas (e.g. Artistic, Scientific, and Industrial), 66 Work Groups, and 348 Subgroups. For each of the 66 work groups, the GOE contains the following information: A definition of the jobs in the group, "What kind of work would you do?", "What things about yourself point to this kind of work?", "What skills and abilities do you need for this kind of work?", "What else should you consider about this kind of work?", and the training needed for the subgroup. Unlike the DOT, the GOE is intended for use both by professionals and clients. The six digit GOE classification code is a very useful way of classifying all jobs according to interest. Appendix C in the GOE publication, contains the addresses of organizations and agencies that provide occupational information on specific jobs. (Available from American Guidance Service.)

Occupational Outlook Handbook - The Bureau of Labor Statistics publishes a new edition of the Occupational Outlook Handbook bi-yearly. Each new edition contains current information on the projected number of specific jobs and small clusters of related jobs available. Each section begins with an overview of the entire occupational group (e.g., Managers and Administrators) and then presents information on a narrow group of related occupations (e.g., Bank Officers and Managers). The following outline is used: relevant DOT codes; nature of the work; working conditions; employment; training, other qualifications, and advancement; job outlook; earnings; related occupations; and sources of additional information. Under "sources of additional information" the OOH includes the names and addresses of professional organizations, unions, industry trade associations, and other sources that provide information about these occupational areas. (Available from the Superintendent of Documents.)

Occupational Outlook Quarterly - Published by the Bureau of Labor Statistics, this journal contains articles on new occupations, labor force trends, new technology and occupational outlooks. It is available from the Superintendent of Documents.

2. Documents Related to Labor Department Publications - Two private documents contain information on the Worker Trait Profile for each job listed in the DOT. This information could be used to provide the client with VERY GENERAL information on the working conditions, physical demands, aptitudes, etc. needed to perform on a job. This information would also have relevance to counseling. However, it should not be used for considering a placement into a specific job or training program. These two documents are:

   The Classification of Jobs (Revised Edition) - Contains the following information about each job in the DOT: DOT code number and title, physical demands, environmental conditions, GED, SVP, aptitudes, bi-polar interests, temperaments, GOE, industrial designation, MPSMS, work field, CIP, census codes, SOC, SIC, and OES. This manual also contains crosswalks between the DOT code and most of the job classification codes mentioned above (available from Elliot and Fitzpatrick, Inc.).

   The Encyclopedia of Job Requirements - Contains the following information about each job in the DOT: DOT code number and title, SVP, DPT, GED, aptitudes, physical demands, environmental conditions, bi-polar interests, temperaments, SVQ, TRSVQ, DVVQ, and GOE. The SVQ, TRSVQ, and DVVQ are codes unique to the McCroskey Vocational Classification System (McCroskey and Perkins, 1981) and would not be used unless the evaluator decided to follow this system (available from New Concepts Corp.)

3. Private Sources - Even a casual look at one or two vocational counseling journals and a quick trip around the exhibit floor at a convention would convince everyone of the wealth of the commercial occupational information material presently available. Items range from complete systems to individual brochures. It is beyond the scope of this publication to provide even an incomplete list. There are, however, some general sources of information:

   The Career Development Quarterly - Sponsored by the National Career Development Association (NCDA), each issue of this journal contains a "Current Career Literature" section listing new vocational, educational, and personal materials. These materials are rated according to how they meet NCDA guidelines. Many of the materials listed each month should be useful for adults in occupational exploration. Subscription information can be obtained from The Career Development Quarterly (see appendix for address).

   Occupational Outlook Handbook - As mentioned above, this Labor Department lists the names of union, professional groups, trade associations, etc. that have occupational information available to the general public.

   Commercial Sources - There a many companies offering occupational information services. Although it is suggested that the reader obtain information from the back of The Career Development Quarterly, the following are some of the many commercial developers (see appendix for addresses): Careers Inc., Chronicle Guidance Publications, Cornell University Career Center, Peterson's Guides, Inc., Science Research Associates, and Vocational Biographies.

4. State and Local Sources - State and local sources of occupational information are usually a combination of public documents, private information, and the evaluator's personal knowledge. At the state level, the two most useful are the job service and SOICC:

   State and local job market and career information is available from State employment security agencies and State Occupational Information Coordinating Committees (SOICC's). In general, State employment security agencies develop occupational employment projections and other local market information. SOICC's help people locate labor market and career information available within their State. Many SOICC's also provide a variety of occupational resource and career information (Bureau of Labor Statistics, 1986, p. 492).

   The Occupational Outlook Handbook contains an appendix of all job service research directors and SOICC directors. In addition to these two organizations, many states publish employment and economic information at regular intervals. For example, the State of Wisconsin's Department of Industry, Labor and Human Relations publishes two documents, Wisconsin Economic Indicators and Wisconsin's Employment Picture.

   At the local level the picture becomes more confusing; usually there are no documents that offer concise information. Therefore, the evaluator must rely on his/her own experience and initiative. Some ways of obtaining information on employment and jobs are as follows: (1) Local job service data on types of openings posted and on hiring trends will prove useful. Because this information is usually given using DOT titles and codes, it can be related to other information classified by DOT code. (2) Studies done by Chamber of Commerce and other

business groups or organizations can often provide needed information. (3) Some vocational-technical schools perform placement services and keep records of students placed. If the center refers clients to a voc-tech school, then this type of information could be useful. (4) Placement specialists within the sponsoring facility and other human services programs could also provide first hand information. (5) The evaluator with job analysis skills will be able to develop much of his/her own occupational information.

The above sources are largely print media intended for a wide range of users, such as guidance counselors, teachers, manpower trainers, and rehabilitation counselors. There are two different types of occupational information that are more within the traditional realm of the evaluator: work samples and computerized job matching systems. Because of their importance they will be treated as a separate topic within the general discussion of sources on occupational information

Work Sample Systems and Job Matching Systems - Some work sample systems were designed with the expressed purpose of providing an opportunity for client occupational exploration. Generally, these systems present occupational information using either computer graphics or slide-tape. The client looks at this information and then performs one or more tasks related to that job. For example, in the Singer Masonry Work Sample, the client watches about 12 frames providing occupational information on bricklayers, block layers, etc. and then is given detailed instructions for mixing mortar and laying a corner of bricks. Although the work samples systems listed below provide fairly accurate information on the occupations they represent, the evaluator must supplement this information with local information. At the end of the work sample, the evaluator should provide information of local employment prospects, the availability of training, wage and benefit information, local contractors who hire masonry workers, and duties performed.

There are four advantages to using work samples. Most important, they provide a subjective experience for the client as well as some objective information. This experience is probably more useful for younger clients. Second, they give the evaluator an opportunity to make behavioral observations about the client's work habits; these could be related to the Work Behaviors and Attitudes assessment described in the last chapter. Third, these work samples do provide some objective information on the client's ability to perform tasks contained in the work sample. Finally, they offer a controlled environment for the client to do some reality testing of his/her interests and abilities.

The use of these work samples, however, are not without problems. First, each work sample was designed for a national audience; this means that the tasks and information provided may not represent local conditions. As stated above, these work samples must be supplemented by local information. Time is the second problem. Most of the occupational work samples take about two hours to complete; this could pose a problem if the center is trying to keep costs down by reducing the number of billable hours. Here the center will have to decide if they wish to trade time for a reasonably accurate simulation of a job or cluster of jobs. This third problem is cost. To fully equip the center with even one entire system takes a considerable amount of money. For example, the Prep Work Samples range in price from $480.00 to $4,250.00, with the average being $1,343.00 (Botterbusch, 1987). Therefore, the work samples will have to be selected with considerable care to represent commonly available job opportunities. This problem will be discussed in greater length in a few pages.

At present there are three systems that offer a considerable opportunity for hands-on occupational exploration:

1. Microcomputer Evaluation of Career Areas (MECA)

   Purpose - To provide vocational exploration experiences.

   Times - Each work sample is independent and takes about two hours to administer.

   Recommended Client Group - Although designed for schools, especially disadvantaged and special needs students, the MECA could be used with other populations.

   Name of Work Samples - Fifteen work samples: Automotive, Building Maintenance, Cosmetology, Graphic Design, Custodial Housekeeping, Electronics, Small Engines, Food Service, Health Care, Business and Office, Manufacturing, Distribution, Construction, Horticulture, and Computers.

   Available from: The Conover Company

2. Prep Work Samples

   Purpose - Provide occupational information through simulation in U.S. Department of Education Career Clusters.

   Times - Each work sample is independent and takes about two hours or longer.

   Recommended Client Group - Initially designed for special needs populations, presently used in secondary schools, vocational education, manpower programs and corrections.

   Name of Work Samples - Twenty-seven work samples: Drafting, Clerical/Office, Metal Construction, Sales, Wood Construction, Food Preparation, Medical Services, Travel Services, Barbering/Cosmetology, Small Engine, Masonry, Electrical, Electronics, Automobile, Commercial Art, Nutrition, Bookkeeping, Fire Science, Extraction Technology, Clothing and Textiles, Real Estate, Communication Services, Refrigeration, Computer Technology, Solar Technology, and Machine Trades.

   Available from - Prep, Inc.

3. Vocational Evaluation System by Singer (Singer)

   Purpose - To assess and provide occupational information on groups of closely related jobs having common tasks.

   Times - Each work sample is independent and takes from two to two and a half hours.

   Recommended Client Group - Designed for special needs populations (e.g., disadvantaged, mildly retarded, physically handicapped). Many have been adapted for hearing impaired persons and Spanish speakers.

Name of Work Samples - Twenty-eight work samples: Sample Making; Bench Assembly; Drafting; Electrical Wiring; Plumbing and Pipe Fitting; Woodworking; Refrigeration and Air Conditioning; Sales Processing; Needle Trades; Masonry; Sheet Metal; Cook and Baker; Engine Service; Medical Service; Cosmetology; Data Calculation and Recording; Production Machine Operating; Household and Industrial Wiring; Filing, Shipping, and Receiving; Packaging and Materials Handling; Electronics Assembly; Welding and Brazing; Office Services; Basic Laboratory Analysis; Diesel Engine Service; Auto Body Repair; Machine Trades; and Information Processing.

Available from - New Concepts Corp.

At present about 15 computerized job matching systems are available for general use. Although the basic purpose of each is to match a set of client characteristics with occupations in one or more data bases, two systems, Computerized Career Assessment and Planning Program (CCAPP) and CHOICES, are designed to provide occupation information in a systematic way. The client uses these systems and their accompanying print materials to obtain information about the jobs in the data base. These systems have the advantage of being able to provide information in an organized, logical sequence; this saves the client from having to search through files. In addition, some clients will find the use of a computer to be a rewarding experience in itself. The CHOICES system contains 885 occupations; CCAPP 1200 occupations. Although both systems operate by having the client narrow down a list of occupations to a select few, the methods used differ considerably. In CCAPP the client proceeds through the program in a predetermined sequence. CHOICES requires the entry of from 1 to 14 factors (e.g., Holland interest codes, aptitudes, and annual earnings) in sequence of importance; this provides the user with a considerable amount of flexibility (Pinder, 1982).

As with the work sample systems, the evaluator must determine if the job matching system contains information relevant to the local labor market. Because labor markets change, this decision should be reviewed at regular intervals. A brief description of the two systems is as follows:

1. CHOICES

Purpose - To "introduce users to a vocational decision making process and to provide career guidance and occupational information..." (Botterbusch, 1986, p. 31)

Times - The client performs a series of self-assessment exercises prior to using the program; the process plus computer usage should take between two and four hours.

Recommended Client Group - Although the major target group is high school students, the system can be used by adults. An eighth grade reading level is required.

Information Provided - The printout for each job contains the following information: education, work site, physical demands, temperaments, earnings, aptitudes, interests, future outlook, Holland codes, career field, physical activities, hours of work, environment, and training.

Available from - CSG Careerware

2. Computerized Career Assessment and Planning Program (CCAPP)

Purpose - "To provide the following information: (1) career interests and ability, (2) what jobs are related to interests and ability, and (3) to help develop an orderly plan to prepare for entry in a career choice..." (Botterbusch, 1986, p. 55).

Times - Times vary greatly with the needs and abilities of the client.

Recommended Client Group - Designed primarily for high school students; materials require a fairly high reading level.

Information Provided - The printout for the Explore Individual Occupations option contains the following headings: work situations, Data-People-Things, mathematics and language ability, physical demands, work environment, education and training, salary and employment outlook, and other information.

Available from - Jefferson Software

What Occupational Information Materials Should Contain - Selecting occupational information is a difficult task. The community transition center must carefully balance information with work samples, local with national information, and the need to always maintain up-to-date information. Occupational materials should be selected with the following in mind: (1) its relevance to the local labor market, and (2) the characteristics of the material itself. Some methods for determining the local labor market were discussed above. Each piece of occupational information should be accurate, realistic and easy to read and/or understand. Regardless of whether the material is presented in a print or non-print format, the description about each job or cluster of jobs should cover the following:

1. Employment Prospects - Are the workers in demand and will they continue to be in demand? Is employment expected to increase or decrease?

2. Nature of the Work - What is the work of a typical day, week, month, and year? What does the worker do - the pleasant things and the unpleasant things? What are the responsibilities? Does the worker deal mainly with data, people or things? What kinds of tools, machines, and materials does the worker use? What are the physical demands? Is travel involved?

3. Work Environment - In what kind of surroundings is the work done - hot, cold, humid, dry, wet, dusty, dirty, noisy? Are there sudden changes in temperature, odors, and hazards? Does one work with others, near others, or alone? If with others, is the relationship one of superiority, inferiority, equality, conflict, or stress?

4. Age - What are the [usual] upper and lower limits for entrance and retirement?

5. Sex - Is the job [traditionally viewed as] predominantly for males or for females...?

6. Aptitudes - Are there any minimum tested aptitudes required as revealed by test scores...

7. Tools, Equipment, and Uniforms - Must these be supplied by the worker and what are the costs?

8. Legal Requirements - Is a license or certificate required? Is citizenship required?

9. Residence - Must the worker be a resident in the town or area where the occupation exists?

10. Union - If it is a union job, what are the requirements for entry and costs for initiation and dues?

11. Training and/or Educational Preparation - How much and what kind of preparation is required to meet legal requirements and employers' standards? How long does it take, what does it cost, and what does it include? Where can one get a list of approved training institutions? What kind of previous education is necessary and what subjects must have been taken? Is experience a prerequisite to further training? What provisions, if any, are made for apprenticeship or other training on the job?

12. Entry Methods - How does one get the job - i.e., examination, applying to the employer, joining a union, registration with employment agencies?

13. Advancement - What proportion of the workers advance and after how long and after what additional preparation or experience? What are the related occupations this may lead to?

14. Earnings - What are current average earnings?

15. Type of Employer - Are the workers employed by private industry, by government, or are they self-employed?

16. Other considerations, Advantages, and Disadvantages - Are hours irregular, long, or short? Is there frequently overtime and night work or Saturday, Sunday, or holiday work? What about vacations, maternity and paternity leaves? What are other fringe benefits? Are the skills required transferable to other occupations? (Hoppock, 1976 as quoted in Fry, 1978, pps. 4-5).

The above 16 considerations apply to all occupational information. If media are used, several other factors should be considered:

1. Is the pictorial content dated in terms of work activities, clothing and hairstyles worn by the actors, and equipment used?

2. Are there women and minority group members represented in the presentation?

3. Does the presentation only give the positive side of the job? Does the presentation include information on the negative side of the job?

4. What are the ages of the participants? Does the media presentation only include younger persons?

At this point, center staff have determined what materials are needed to cover the local labor market and have selected a mixture of media and hands-on materials. The next step in establishing the occupational exploration service is to organize the materials an meaningful way.

Methods of Organizing Materials - In order to use the print, non-print media, and work samples, the center must have a practical and easy to use classification system. Ideally, this system must be usable both by clients and staff. According to Hoppock (1976), there are several methods for classifying jobs: (1) by activities, such as selling, teaching, and typing; (2) by function, such as research, finance, and manufacturing; (3) by product such as chemicals, trucks and computers; (4) by employer, such as General Electric, Burger King, and Sears; (5) by expressed interest of clients; (6) by measured interest patterns, such as artistic, computational, and persuasive; and (7) by school subjects, such as mathematical, shop, and music. Although these methods may be appropriate for a high school counselor or college placement service, the community center needs the potential to deal with all the jobs in the local economy, and to some degree in the national economy as well. Therefore, the center will have to adopt an classification system that is national and all inclusive. Because the assessment functions of the transition center are closely tied to the Worker Trait Profile and to the U.S. Department of Labor classification systems, we suggest that either the Occupational Group Arrangement or the Guide for Occupational Exploration codes be used. Of these two systems, the GOE codes appears to the more appropriate for most transition centers.

The Occupational Group Arrangement (OGA) is the first three digits of the nine digit Dictionary of Occupational Titles code. Each of the 12,099 jobs in the DOT and those in its two supplements is classified according to the code. The OGA is a three level classification scheme in which occupations are first organized into nine Categories (e.g, Processing Occupations and Service Occupations), 82 Divisions (e.g., Occupations in the Processing of Metal and Lodging and Related Service Occupations), and 559 Groups (e.g., Dip Plating Occupations and Housekeepers, Hotels and Institutions). This classification is based on one or more of the following factors that all jobs within the Group have:

General type of knowledge and skills
Broad subject matter
Type of activity or service and the reason for that activity or service.
Materials, tools, equipment or work aids used.
Resulting material or service (Robinson, 1979, p. 27)

The advantage of using the OGA is that all information can be directly related to the labor market. For example, the job service classifies all openings by DOT code, which include the OGA; many training programs can also be easily classified by OGA.

The second classification method is the system used in the Guide for Occupational Exploration. This three level classification begins with 12 general interest areas (e.g., Artistic, Protective, and Mechanical). Each of these areas is classified into Work Groups (e.g., Security Services and Quality Control) and Subgroups (e.g., Equipment Operations, Food Processing and Keyboard Machine Operation); there are 66 Work Groups and 348 Subgroups. The major advantages of using this system are: (1) occupational information can be directly related to the results of interest testing and

(2) the GOE codes can be used by many computerized job matching systems. The GOE codes may also be easier for clients to understand and use. The classification occupations by GOE code is easy. Once the occupation has been classified according to its DOT title and code, the next step is to assign the appropriate GOE code. Appendix E of the Guide lists each job in the DOT in alphabetical order together with its GOE number. The evaluator can use this Subgroup number to locate the job within the Guide. Each Subgroup in the Guide for Occupational Exploration lists all the occupations by DOT title and code belonging to that Subgroup. Regardless of how the material are organized, each unit of information should include both the DOT and GOE codes.

At this point the evaluator has selected the appropriate occupational information material and has organized it into a classification system. The next step is to physically arrange the materials in a filing system. Hoppock (1976) describes the characteristics of a good filing system for occupational information:

1. It should provide a safe place for housing written and printed documents, clippings from newspapers and magazines, posters, pictures, films, tape recordings, pamphlets, books and anything else that may contain useful information.

2. It should provide one and only one designated location for each item to be filed, so that there may be no confusion about where to file an item or where to find it.

3. It should be easy to use, so that all who use it can find what they want with a minimum of time and effort.

4. It should bring together as many as possible of the materials on any one occupation, industry, or employer.

5. It should bring together related occupations or industries or employers.

6. It should provide some means of quickly finding materials in omnibus books and other publications which describe several different occupations.

7. It should be expandable, so that it can grow as the collection grows.

8. It should provide for filing and finding related materials, such as the results of follow-up studies and community occupational surveys.

The entire occupational information system has been established and is now ready for use. The final section offers a brief description of how the occupational information system functions.

Providing Occupational Exploration Services - The goal of occupational exploration is to provide the client with objective and subjective information that can be used in career planning. Within the organization of the transition center, occupational exploration is seen as a being closely related to interest assessment and vocational counseling. In many instances occupational exploration will occur after interest

testing and before vocational counseling. Occupational exploration services would be offered to two separate groups: (1) younger persons with little realistic concept of what occupations are available and (2) persons who have been removed from the competitive labor force for a period of time.

In theory, occupational exploration should expose the client to all the major occupational areas in the national economy. However, to have a person systematically explore all areas would be unrealistic in terms of time and the client's tolerance for accepting new information. Therefore, the center should take a different approach. The selection of occupational exploration materials would be limited to jobs that the client: (1) could perform, based on test and other results, and (2) to career areas to which the client has a definite interest.

By limiting occupational exploration to jobs within the abilities of the client, the center is performing two separate functions. First, by limiting exploration to jobs within the client's abilities, occupational exploration becomes a positive experience. Because the client investigates only jobs that he/she can reasonably perform, he/she does not experience the frustration of finding an interesting career area only to be told that he/she does not have the ability to enter that area. In the community center occupational exploration comes at the end of the assessment process. The client's aptitudes, literacy levels, physical demands, and work behaviors will first be determined. These results would be summarized into a profile of the client's qualifications. These qualifications are then compared either subjectively or through the use of a job matching system to determine either individual jobs or clusters of jobs that the client could perform. Results from interest assessments would also be included. At this point the client and evaluator review the jobs that are within the client's abilities. The client is exposed to occupational exploration materials and work samples that enable him/her to reach a vocational decision.

The second restriction would limit the client to areas in which he/she demonstrated a definite interest, such as the GOE areas of Business Detail or Plants and Animals. By initially restricting exploration to jobs in which the client has a definite interest, the evaluator can confirm the client's interests. If after exposure to materials, the client decides that he/she is not interested in that work area, the logical next step is to take the second highest interest area, etc. If the client exhausts all interest areas without finding one to his/her liking, the next step would be vocational counseling to clarify interests, aptitudes and values. Used in this way occupational exploration is a sheltered reality testing for the client.

In conclusion, the occupational exploration process is intended to be one of the more subjective services offered by the community transition center. It's purpose is to provide the client with objective information that is used to help him/her make subjective decisions about likes and dislikes.

Computerized Job and Training Matching

The goal of most of the community transition center's services is to prepare a client for competitive employment or to enter a training or educational programs leading to employment. In order to accomplish this process the center provides various assessment services, occupational exploration, counseling, and job seeking skills. These services must be anchored in the reality of the local labor market. A well-designed computerized job matching service can provide some of this reality.

The desired outcome of a job search should be a list of specific jobs, by DOT title and code (1) that exist (or have openings) within the local economy and (2) for which the client has the ability and interest. If the client is considering additional education and training, the desired outcome is a list of specific training programs. Either of these outcomes provide the client with the information needed to pursue competitive employment.

Most computerized job matching systems compare a client's Worker Trait Profile to the requirements of occupations within one or more data bases. As stated at the beginning of the last chapter, one purpose of the various assessment services is to provide an accurate Worker Trait Profile. Once data on aptitudes, interests, physical demands, etc. are obtained, these data can be used for input into a job matching program.

Requirements for a Job Matching Program - The major requirement of a computerized job matching program is that it contain data bases relevant to the community.[16] At present there about 15 computerized job matching systems available. These systems contain one or more of the following data bases: (1) the entire Dictionary of Occupational Titles or a selected group of occupational definitions, (2) an employer file containing a list of known employers within a particular geographical area, (3) a job bank containing current position openings, (4) an educational file containing a listing of colleges, vocational-technical schools, etc. within a specific geographical area, and (5) a client bank, containing a listing of client profiles to be matched against one or more of the preceding data bases. Of these five commonly used data bases, the employer file and the job bank are the two most relevant for placement. Although all of the first four data bases are useful for counseling and occupational exploration, the DOT and the educational data bases would probably be the more useful.

The transition center should select a job matching system with both an employer file and a job bank. Employer files are based on the probable existence of job titles within specific local "establishments." These employer files are organized around Standard Industrial Codes (SIC), which in turn, are based on the concept of "establishments." An establishment is "an economic unit, generally at a single location, where business is conducted or where services or industrial operations are performed" (Office of Management and Budget, 1987, p. 12). Each job in the DOT is assigned one or more SIC codes, based on the location of the work. For example, the DOT occupational title Tool Maker (601.280-042) is assigned the SIC code of 3599, "Machinery, except electrical, n.e.c." Thus, the job of Tool Maker would commonly be found in companies manufacturing a wide variety on non-electrical equipment. Because some job matching systems offer already developed employer files, the transition center may not have to develop its own employer file. Employer files are the step between the general DOT data bases and the specific job bank. These files offer the user the names and addresses of specific establishments that most likely have positions similar or identical to those described in the DOT; they do not list specific job openings.

If the center is interested in direct placement, the most valuable data base is the job bank. Because a community job bank is a dynamic data base, it is impossible for a software developer to provide this service. However, many computerized job matching systems offer a format for developing a local data base. This format typi-

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[16] Much of this discussion is based on material presented in A Comparison of Computerized Job Matching Systems: Second Edition.

cally consists of the Worker Qualifications Profile for the job and identifying information, such as employer name and address. Before deciding on a system, the user should carefully review data entry formats to determine if they contain the variables considered important to the center. The user is responsible for obtaining position openings, determining their worker traits, and entering the information into the system. If also requires follow-up to determine when a position is filled so that the job can be removed from the data base. Although job banks are the most powerful use of a job matching system, they require a considerable commitment of staff time and resources. The community center should carefully consider their advantages against the payoff. One possible solution is to offer job bank searches for a fee to a wide range of community employment, social, and rehabilitation agencies.

In addition to considering the data bases, the transition center should also consider two other factors:

1. Versatility - The job matching system must be flexible in two ways: user options and selection of data bases. Ask if the program has a wide variety of options that can be used for placement, counseling, etc.

2. Cost - The potential purchaser should calculate the total cost of the hardware estimate, the cost per client, and determine the benefits derived from use. The initial cost depends on what equipment and software must be purchased.

Job Seeking Skills

Because one mission of the community vocational transitional center is to assist clients in obtaining competitive employment, the center should also include a job seeking skills program. The job seeking skills program is seen as a means for providing mildly handicapped, socially disadvantaged, and nonhandicapped persons with the tools for searching out job leads, and obtaining a job. As the reader is well aware, this approach to employment will not work for everyone and many clients will need to be referred to other programs designed to provide more intensive help (e.g, Barret and Lavin, 1987; Fadely, 1987). The major purpose of a job seeking skills program is to teach clients the specific behaviors and knowledge needed to successfully seek and find employment. Most programs provide very specific information on topics such as completing applications, searching for job leads, and appropriate dress. Most include several exercises on determining employment assets and limitations.

Unfortunately, a review of the literature for the last 15 years has lead to the conclusion that while there a good many approaches and programs, there is little empirical research on what methods are effective (e.g, Stude and Pauls, 1977; Stevens and Tornatzky, 1976). For example, two studies on the use of media reported opposite results. Stone and Geppert (1979) failed to find significant differences in behavior following exposure to the MDC "Job Quest Series." On the other hand, Pinto (1979) reported that the use of video recorded interviews to provide client feedback was an effective technique. Because of this lack of research, the community transition center wishing to develop a job seeking skills program should base their program on common sense and a personal knowledge of client needs in their area.

Two Basic Approaches - A review of the literature leads to the conclusion that there are two basic approaches to teaching job seeking skills. The first, the job club approach, was developed by Azrin and Besalel (1980). The job club provides instruc-

tion and feedback based on peer support and criticism. The job club approach outlined by Azrin and Besalel (1980) contains 33 specific steps:

1. Job seeking as a full-time job.
2. Friends, relatives, and acquaintances as sources of job leads.
3. Standard scripts and forms.
4. Facilities and supplies.
5. Group support from other job seekers.
6. Buddy system.
7. Obtaining unpublicized jobs.
8. Use of the telephone as the primary contact for leads.
9. Classified directory (yellow pages) of telephone book.
10. Emphasis on personal and social skills.
11. One job lead uncovers others.
12. The call-back.
13. Transportation.
14. Former employers.
15. Open letters of recommendation.
16. Resume.
17. Employment application.
18. Interview training.
19. Interview checklist.
20. Job wanted ads.
21. Nonemployment derived work skills.
22. Structured job seeking schedule.
23. Leads list.
24. Progress charts.
25. Job supervisor.
26. Relocation.
27. Handicaps.
28. Letter writing for job leads.
29. Family support.
30. Photograph (optional)
31. Employment applications.
32. Capability for many positions.
33. Continued assistance.

Because of the emphasis on peer support and assistance, (i.e., steps 5 and 6), the job club method has been characterized as an AA for the unemployed. The job club is not seen as a program where a client enters, completes the program, and then leaves; rather if the client has an unsuccessful employment experience, he/she can reenter the job club program at anytime. In spite of this emphasis on peer support, the job club method depends upon a counselor or other professional to conduct formal training sessions.

The second approach uses a professional staff person to teach specific skills to the client. Although there is interaction between clients, it is not formally incorporated into the training. Specific skills are taught through a variety of methods including discussion, paper-and-pencil exercises, self-examination, and simulations. These programs are more directive than the job club approach and are usually last for a specific number of days or hours. Prior to actually making contact with employers, the client is expected to learn all the skills needed to search and interview for a job. Some examples of this approach are: Job Information and Seeking Training Program (Midtown Community Mental Health Center, 1980), Job Readiness Training Curriculum

(Tesolowski, 1979), Job Seeking Skills (Hodgson, 1979), and Employment Orientation Workshop (Von Volkli et al, 1982), and Job Seeking Skills Course (Boerner, 1988). A rather long quote by Clark (1981) describes the content on most programs:

> ... most of which are similar in basic format. These programs consist of four to ten clients in a group who receive job seeking and development skills instruction for one to five days. Usually clients will begin by identifying their skills and/or assets and how to present them in the best possible light. Employer questions about problem areas such as permanent limitations or restrictions imposed by a disability and poor work history are dealt with in advance by developing answers that deal with these problems in a positive manner. Understanding employer concerns in advance allows the client to project a positive self, dealing with skills and assets rather than limitations or restrictions. In short, instruction in job seeking skills will assist the client in how to most effectively construct a resume/personal data sheet, fill out an application, write employment letters, and conduct an employment interview and interview follow-up (pps. 6-7).

Suggested Content - Regardless of the basic approach used, a review of the above referenced publications and others lead to the conclusion that most job seeking skills programs contain similar content. Although the community center could either develop their own program or use one of the above referenced programs, it is suggested that an existing program be modified for local use. This would save considerable time and money. State laws, employment conditions, transportation systems, the type of jobs available, etc., differ within each area and these conditions must be reflected in the job seeking skills program. For example, the center could use local industries as examples, obtain application forms from local employers, seek advise from personnel managers, be knowledgeable of state affirmative action laws and policies, and use the local employment service as a resource.

The following program outline by Hodgson (1979) is offered as the suggested content for a job seeking skills program. The schedule and topics are as follows:

Monday	
8:30	Orientation
10:15	Break
10:30	Introductory exercise
11:30	Self-inventory: work values, thought questions, possible limitations, positive traits.
12:30	Lunch
1:30	Discuss assets, limitations
2:15	Long range goals, short range objectives
2:45	Break
3:15	Resume development
4:00	Dismissal
Tuesday	
8:30	Finish resumes
9:15	Communication skills
10:15	Break
10:30	Job sources
12:30	Lunch
1:30	Using telephone book
2:30	Break

2:45 Calling for an interview
3:30 Fringe benefits and payroll deductions
4:00 Dismissal

Wednesday
8:30 Applications
10:15 Break
10:30 Applications (continued)
12:30 Lunch
1:30 Grooming and hygiene review
2:30 Break
2:45 Interviewing preparation
4:00 Dismissal

Thursday
8:30 Interviewing (videotape)
A. Interview will be done in sets, one at a time, with group reviewing each tape for immediate feedback. Each interview will be rated.
B. Clients not being interviewed will complete unfinished assignments, job exploration, visit Job Service, listen to related tapes and take breaks
12:30 Lunch
1:30 Interviewing (continued)
4:00 Dismissal

Friday
8:30 Complete unfinished activities, discuss handling job problems, unions, etc.
10:15 Break
10:30 Review and feedback
12:30 Dismissal

In summary, the job seeking skills program offered by the community transition center is aimed at persons needing a limited amount of help in obtaining employment. The major purpose of a job seeking skills program is to provide the client with a realistic estimate of his/her strengths and limitations, provide information on how to look for a job, application and resume completion, dress and hygiene, and how to interview.

Vocational and Educational Counseling

One mission of the community center is to provide clients with accurate information about themselves and the world of work. It is assumed that the client will use this information to make vocational and/or educational decisions. Often the client will be able to make these decisions either without help or with only informal assistance. There are times, however, when a more sustained action is needed. The goal of vocational and educational counseling within the community center is to help the client clarify values, resolve vocational conflicts, establish goals, and make realistic decisions on how to reach these goals. The purpose of the center is not to deal with major personal problems or provide psychotherapy. These long term efforts are beyond the intent of the center; they are also beyond the skills of most vocational counselors.

The center should be flexible and provide both group and individual counseling at times convenient for clients. The center could also offer vocational counseling as a specific stand-alone service for persons changing careers or persons reentering the labor market (Shapiro et al., 1985).

Although vocational counseling is commonly a synthesizing process occurring after assessment and occupational exploration, it can occur at any point. For example, if a referred client has little or no concept of vocational opportunities or his/her vocational assets, then he/she should receive counseling immediately after referral. At this point counseling would include a clarification of vocational values and needs. The rest of the assessment process would be based on this information. Counseling could also occur at the end of assessment. At this point the client is provided detailed assistance on how to interpret the results and how to relate these results to vocational planning.

Because vocational and educational counseling are professional fields with their own specific methods, procedures, body of literature, and issues, it is far beyond the scope of this publication to provide specific details on the various procedures used in counseling. The reader should obtain specific information in these areas.

Independent Living Skills Assessment

The final service provided by the community vocational transitional center is an evaluation of a client's independent living skills. Although this is the only program offered by the center that is not directly vocational in nature, it is necessary for two reasons: (1) The very name "transitional" implies a change from one state to another. Within the context of this publication, this term means a change from unemployment or underemployment to appropriate competitive employment. As a person moves toward vocational independence, he/she also moves toward living independence, or at least living in a less restrictive environment. (2) Although the center concentrates on vocational change, these changes cannot be separated from other aspects of the client's life (Close, 1977; Conroy et al., 1982). Vocational and non-occupational behaviors all occur within the same person. Problems with hygiene, lack of proper food and rest, financial problems, and other independent living problems, have direct effects on the job. Anyone who has ever come to work tired, after an argument with his/her spouse, or with a hangover realizes this.

The purpose of the center is to assess a client's present level of functioning; it is not to increase a person's independence. Within the framework of the transition center, living skills assessment would be conducted by center staff as another assessment. A client's level of independence should be developed by the specific behaviors required to perform in a given environment.

A Problem with Measurement - Most manuals and training guides assume that the client is assessed within a independent living program or within another controlled environment, such as a group home (e.g., Nylander et al., n.d.; Kulas, 1977; and Talarico & Slusher, 1982). In general, adjustment or independent living staff observe the client performing specific tasks to determine if he/she possesses specific behaviors. If the client is not able to perform a task, he/she is then taught. Teaching is often based on highly detailed task analysis of a specific behavior, such as brushing teeth or using a bus schedule. Teaching, performance, and feedback are continued

until the client reaches a pre-determined criterion (e.g., 90% correct; "Client brushes teeth twice daily for a week without being told.")

These hands-on independent living assessments require a considerable investment in space, staff time, and materials. This would simply not be feasible for an assessment center. Instead, the center will have to rely on methods other than behavioral observation and performance. This implies the use of an interview format with a checklist.

This checklist and interview format would classify behaviors into general categories (see below for general topic areas). Within this general classification, specific behaviors would be listed in a task-by-task format. The evaluator asks if the client performs the behavior; if the answer is "yes", he/she is then asked what elements are required. For example, if the client claims to know how to use a washing machine, the evaluator would ask him/her to give the following steps, more or less in order of occurrence:

1. Identifies and collects dirty clothes and takes to washroom.
2. Sorts clothes into appropriate piles (light/white) (colored/dark).
3. Sorts clothes in washer one at a time, until washer is approximately half to three-fourths full.
4. Identifies and locates laundry soap.
5. Measures appropriate amount of laundry soap and adds to machine.
6. Turns water temperature dial to appropriate wash and rinse temperature.
7. Turns wash cycle dial to appropriate wash cycle.
8. Starts washer.
9. Shuts lid.
10. When washer stops completely, lifts lid.
11. Removes clothes one a time and places in basket.
12. Checks washer for excess clothes and debris and removes.

(Sioux Vocational School, 1979, p. 44)

If this method is used, the center will not have to develop an entire new set of materials. The general behaviors with their elements in sequence are already in existing manuals (e.g., French and Doctor, n.d.; Tiller, 1978) could be used. In using this approach the evaluator would have to exercise considerable judgment and allow the client to explain how he/she performs the behavior in his/her own words. Although this approach would be more subjective than actual demonstrations of these behaviors, it would provide a screening of the client's independent living skills in many specific areas.

The Classification of Behaviors - The average adult performs an extremely wide range of behaviors in a typical day: personal care; preparing meals; driving or using public transportation; social interaction with family members, co-workers, friends, and supervisors; shopping; cleaning; laundry; household maintenance; financial planning and paying bills; and a wide variety of leisure activities and hobbies. For a person to be fully independent, he/she must master a body of knowledge and then perform the behaviors appropriately. Independent living programs have classified these behaviors according to where they are performed and their relationship to other behaviors. The classification of the types of behaviors assessed and taught differs with various programs. Several manuals have classified independent living behaviors as follows:

Kulas (1977):

1. Self-help skills - eating, dressing, personal hygiene and grooming.
2. Language skills
3. Socialization skills - social conventions, providing personal information, leisure time and recreational skills.
4. Motor development skills - gross and fine.
5. Basic Academic skills - pre-academic basic concepts, reading, writing, numbers, time, and money.
6. Home Living Skills - clothing care, home maintenance, food preparation, and first aid skills.

Nylander, Eastham, and Ozmun (no date):

1. Financial management - basic math skills, personal identification, money concepts, saving, financial planning, and checking.
2. Communication and language proficiencies - perceptual concepts, verbal language, survival word comprehension, telephone usage, time concepts, and written language.
3. Personal health proficiencies - basic food groups, meal planning, proper diet, grooming and hygiene, leisure skills, and physical and mental health.
4. Social (work) proficiencies - communications, safety, relationships, cooperative behavior, assertiveness training, and personal rights.
5. Pre-vocational proficiencies - productivity and paycheck, job regulations, community awareness, finding and applying for a job, knowledge of job qualifications, and interviewing techniques.

Tiller (1978):

1. Money handling - arithmetic skills, making change, budgeting, checking accounts, saving accounts, and income taxes.
2. Cooking - nutrition, identification and use of utensils and appliances, and meal preparation.
3. Reading - alphabet, functional words, and use of the newspaper.
4. Time - telling time and calendar usage.
5. Writing - writing skills, and spelling skills.
6. Personal identification
7. Use of Telephone
8. Use of the post office
9. Transportation
10. Measurement - linear measurement, measurement abbreviations, and liquid measurement.
11. Housekeeping
12. Clothing care - storage of clothing, washing clothes, drying clothes, ironing clothes, sewing clothing, shoe polishing, and dry cleaning.
13. Self-care and personal hygiene
14. Shopping - introduction to shopping, buying personal hygiene items, buying clothes, buying household items, and buying food.

Regardless of the classification system used, it should be inclusive.

Referral to Another Program - As stated above, the transition center assesses a client's independent living skills, it does not teach clients the skills needed to live in

the least restrictive environment. Therefore, if a client is considered to have deficiencies in one or more areas, the center should recommend training in specific areas. This report should be written in behavioral terms and should identify the specific tasks that need to be taught; it should also contain the clients' demonstrated skills.

In summary, this service would provide a referral source with an objective measure of a client's independent living skills. This assessment would be based on a client's ability to identify the elements in their sequence of the occurrence.

These last two chapters have dealt with the services to be offered by the community transitional center. As previously stated, these should be considered as the program building blocks. Although each service can stand alone, there are certain logical sequences and combinations of services. There are also certain combinations of services that appear to be reasonable for various client groups; these will be discussed in the next chapter.

CHAPTER 7

Some Possible Service Combinations

The purpose of the community transition center is to provide vocational and vocationally related services to a wide range of persons within a specific geographical area. While this has the advantage of providing a variety of referral sources, it could easily put the center in a position of having to be all things to all people. This position would weaken the center's programs and ultimately lead to a reduction of service effectiveness. In order to prevent this the community center should take two steps: (1) clearly state that the center cannot solve the vocational problems of everyone in the community, and (2) treat each client as an individual.

The essence of the center is to provide a variety of standardized services in a short period of time. As stressed in an earlier chapter, all services are based on a specific number of hours per service. Therefore, persons requiring extended times for services most likely would not benefit from the programs at the center. In other words, the center is not set up to provide services to many severely handicapped persons. The center's staff should make this point very clear when accepting a referral. In terms of daily operation, the center has a responsibility to inform a client and his/her referral source if the center cannot provide the requested service(s). At that point the referral source would be given some suggestions of other facilities or agencies providing that service. The center has a moral obligation to assist clients and referral sources to find the most appropriate source of help.

If the community center is operating as part of a larger more comprehensive facility, the parent facility would be in position to provide extended services. For example, if a severely handicapped person is referred to the center for assessment services, the center would suggest that the parent facility be contacted. The goal of all evaluation and assessment is to obtain accurate data about the client in as little time as possible. Therefore, if the client can be accurately assessed in a few hours, then he/she should be. However, if a client's special needs require more than a few hours, then other sources should be used.

At the other extreme, many of the center's programs (e.g., literacy testing, aptitude/skills assessment, and packaged complete assessment) would not be appropriate for talented and gifted persons. Such persons would be better served in voca-

tional counseling centers. In conclusion, the community center is seen as serving the middle 80 or 90 percent of the population.

The second goal of the center is to treat everyone as an unique individual. Although this appears to be in direct conflict with the stated method of operation for the center, a closer look at specific programs will dispel this apparent conflict. Each of the programs is based on a set amount of time for each service; for example, literacy assessment will take about two hours. Within this two hours, the evaluator is free to administer the test(s) that he/she considers to be appropriate to the client. Thus, two clients would be referred for literacy assessment and be given different tests. The same individualization of measurements would exist within other assessment services: abilities/skills, physical demands, interests, work behaviors, and psychological assessment. The only assessment service that violates this individualization is the packaged complete assessment. Occupational exploration, job/training matching, and vocational and educational counseling are also unique services. For example, the specific type of occupational exploration materials offered to the client would depend on his/her job goals.

Within the context of the two qualifications given above, the center should be able to predict that certain populations will commonly require the same services. The reader should be aware that these are only suggested services and that individual client needs will differ. Each client population below is described in terms of the specific services needed and the reason(s) for these needs. Individual services are listed in the suggested order of administration.

Special Students (Transition from School to Work)

As described in Wheeler (1987), a large number of developmentally disabled students leave school each year and attempt to find jobs in the community.[17] If these students attended a school that did not emphasize vocational and community independence, they will need considerable assistance in establishing themselves within the community (Chadsey-Rusch, 1984). The community transition center's role in this process is to assist in determining the client's vocational skills and abilities. This is especially true if the referral source uses the traditional train-place model of service provision. If the newer place-train model is used, then some of these services may not be necessary. Listed below are the services with the reason for their inclusion:

1. Literacy Assessment - This is needed to determine the student's ability to read vocationally related materials. Included would be basic reading abilities with an emphasis on knowing common work and community related words, such as signs, directions, and warning labels. If the client is going to participate in job seeking skills, it is advised that a reading level be determined.

2. Aptitudes/Skills Assessment - If a train-place model is used, the referral source will want to know the client's aptitudes and basic vocational skills. These would be assessed with non-reading tests and dexterity tests. The results would be matched against job requirements.

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[17] For an excellent literature review on the problems of vocational evaluation, training, and placement of mentally retarded persons see Browning and Irvin (1981).

3. Interest Assessment - As with other populations, transitional students need jobs in which they are interested. The use of picture interest inventories would be useful in determining interests. These results, combined with aptitudes/skills assessment results, would be used to find suitable jobs.

4. Occupational Exploration - A common problem with all high school students is the lack of realistic information about occupations. It is expected that special students information needs would be greater than those of other students. Occupational exploration would concentrate on jobs within the client's ability levels. Kohring and Tracht (1978), reporting on a two week vocational evaluation program for mentally retarded secondary students, found that these clients "responded better to the more 'hands-on' work aspects in contrast to the theoretical content" (p.142). The obvious implication is that work samples would be more effective with this group than printed information or passive activities.

5. Job Seeking Skills - If the student has not received training in this critical area and can benefit from this service, it should be offered. Although many clients require additional services, such as a job coach or placement specialist to locate employment, complete applications, and interview, normalization theory expects that the client will perform these functions to the degree possible (Fadely, 1987; Wheeler, 1987).

6. Living Skills Assessment - Provision of this service is largely dependent upon the school system's teaching of these skills. If the client was a student in a system teaching independent living skills, then this service will not be required. However, if the client appears to lack these skills, they should be assessed and the referral source provided with a detailed report of both competencies and deficiencies.

<u>High School Students (Transition from School to Work)</u>

Many students graduated from high school each year lack solid vocational goals. In this transition to adult life, the young adult often goes through a several year period of short-term jobs, vocational training, and perhaps college enrollment. While some of this self-exploration and reality testing is necessary, the programs within the community transition center could shorten this process. Although the center's services would be helpful to persons who have already left high school, the center could offer these services to students during their last two years of public education. A joint program between center and school would provide a system in which the school receives feedback in time to change the student's academic program. The following services would be offered:

1. Literacy Assessment - Anyone who deals with young adults is aware that many high school students and graduates have low reading skills, especially in comprehension. Because literacy skills are absolutely necessary for most formal training programs, they need to be determined before additional education and/or training is considered. Literacy assessment should concentrate on reading comprehension and the attainment of basic mathematical skills.

2. Aptitudes/Skills Assessment - The use of standardized aptitude batteries, such as the GATB, would estimate the client's basic vocational aptitudes. If

the client is not considering a specific occupation, a determination of general vocational aptitudes would be warranted. The resulting scores would be used in job matching programs and, if needed, in vocational counseling. At minimum, the 11 DOL aptitudes should be measured. If the client has a definite interest in mechanical, sales, clerical skills, etc. occupations, these should be assessed.

3. Interest Assessment - While it is unfair and unrealistic to expect a young adult to select only one occupation as a career choice, interest measurement is needed to confirm or deny preexisting choices and to uncover new interest areas. The type of interest measurement used should offer a wide variety of occupational areas, be easy to read, and allow for the client's often limited knowledge of occupations. An additional comment is needed; when choosing an instrument for this population, the occupational areas included are of particular importance. The instrument should cover a wide variety of skilled and semi-skilled occupations, and not only occupations requiring a college degree.

4. Job Matching Systems - Information on the client's literacy level (i.e., GED), aptitudes/skills, and interests (i.e., GOE) form much of the input in a job matching system program. The job matching system would provide data on two separated functions: (1) existing or available jobs for which the client is qualified and (2) jobs for which the client demonstrates the aptitudes and interests to perform, but lacks the training. In most programs, the job list would have to be divided into these two categories either by the evaluator or client. Information presented to the client is useful for planning for immediate employment or training followed by employment.

5. Occupational Exploration and/or Vocational/Educational Counseling -Depending on the complexity of the job matching results, the client may require occupational exploration to examine some unfamiliar job possibilities presented on the job matching printout. This service would provide the client with objective information on occupation areas for which he/she is qualified. Such information should result in the narrowing of the career choice to one or two closely related areas. If the client cannot make these decisions alone, a short period of vocational counseling may be needed.

Employment Applicants

By assessing job applicants, the center could act as a personnel service for local industry. Here the selection of applicants would be dependent upon the personnel policies and needs of the employer. As stated earlier in this publication, these needs could range from very basic aptitude testing to an entire battery of carefully constructed vocational and behavioral measures. Because of the rising cost of worker's compensation claims, many employers are requiring pre-employment assessment of physical capacities. Behavior and attitudinal measures of the applicant's work habits are of considerable interest. The center's role in employee selection is limited to assisting in the selection and development of assessment materials and to the reporting of results; actual decision making should reside with the employer. Although the specific services would depend on the individual employer, three specific services would be offered:

1. Aptitude/Skills Assessment - The specific tests used are dependent on the specific job and the company. Aptitude and ability testing can be useful; the center should make certain that the EEOC guidelines and the testing standards established by the American Psychological Association are followed. Although beyond the abilities of some transitional centers, it is possible to develop content valid work samples for personnel selection (Guion, 1979).

2. Work Behaviors and Attitudes - The center has the capacity to assess the applicant on his/her vocational behaviors and attitudes. Because this is a sensitive area, the determination of work behaviors should be based on objective procedures. Any use of attitudes as a selection tool should be validated against objective criteria.

3. Physical Demands - The applicant's physical capacities are measured and the results compared either with the physical demands of a specific job or with the employer's general acceptance criteria. It is becoming a practice in some areas to have an applicant complete a thorough physical examination prior to employment for the purpose of determining pre-existing conditions. Should the employee later file for worker's compensation, any pre-existing conditions would be compared to the claimed injury.

Disabled Workers (Transition Back to Work)

One of the major groups served by the center will be disabled workers. If these persons were injured on the job, they will have filed for workers' compensation benefits. If they were injured off the job, they may claim permanent total disability and have applied for Social Security Disability.[18] The center will most likely deal with a worker's compensation case several months or years after the initial accident happened. Although there is much disagreement on the treatment of worker's compensation claims, especially those with psychological ramifications, most authors agree that the longer the time between the injury and start of vocational services, the more difficult the recovery (Deutsch & Sawyer, 1985; Matkin, 1985; and Rasch, 1985). According to Newman et al. (1985) various demographic studies of the characteristics of persons applying for workers' compensation leads to the following composite picture:

> ...the injured worker is likely to be male, middle-aged, and married. He is typically a blue-collar worker who lacks college training and probably has not completed high school. His disability is likely to be the result of a back injury; however, the rehabilitation specialist can expect to deal with a range of physically disabling conditions. Typically, the worker will have been out of work for several months, or perhaps even several years. In some cases, hidden disabilities may be present (p. 120).

The center will provide two separate types of services to these clients: (1) assessment services for determining basic attributes and relating them to job requirements, and (2) vocational analysis to determine the percentage of disability. Several

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[18] Although this discussion will focus on worker's compensation cases, the procedures described and the suggestions made are also applicable to many personal injury, product liability, and medical malpractice suits.

specific services are listed below; depending on the complexity of the case and the needs of the referring party, one, several, or all of these services could be used:

1. Literacy Assessment - This assessment would focus on the client's present language and mathematics levels. Reasoning abilities would also be determined. The results would be compared with the client's formal education and the reasoning, mathematic and language skills needed for specific jobs or training. Because of its importance for training, a special emphasis would be placed on the reading comprehension level.

2. Aptitude/Skills Assessment - In order to develop a rehabilitation plan and to conduct a vocational analysis, the client's present functioning level on the basic 11 DOL aptitudes is needed. In addition, specific transferable skills should be assessed. As with literacy assessment, the major purpose of aptitude/skills assessment is to obtain an accurate picture of present functioning level.

3. Physical Demands - Determining the client's present physical functioning level is often the most important determination in a compensation case. The evaluator must determine the residual functioning level and, often, compare this to the pre-injury level of functioning. During assessment the evaluator must record the client's objective performance as well as behavioral observations on verbal complaints, facial expressions, positioning, etc.

4. Work Behaviors and Attitudes - It is a common observation that the longer a person is removed from work, the greater the deterioration of his/her work habits (Rasch, 1985). This is especially true if the client has a history of marginal pre-injury employment. In order to identify problems that may interfere with employment, the client's attitudes and behaviors may be evaluated. The results can be incorporated in psychological assessment, the vocational analysis, and counseling.

5. Job Matching Systems - This service occurs after the client's present abilities are determined and before vocational analysis or job seeking skills. Often pre- and post-injury profiles would be considered, with the pre-injury profile developed from the client's work history. The post-injury profile is developed from the various assessments described above. The resulting jobs could form the basis of placement efforts.

6. Job Seeking Skills - If the client has been off work for a lengthy period of time and if he/she is not returning to his/her former employer, job seeking skills may be needed. A job seeking skills program developed by State of Washington, Department of Labor and Industry for injured workers should be considered for this group (Von Volkli et al., 1982).

7. Vocational Analysis - If the client has an unresolved legal action pending, vocational analysis would be needed. This combines relevant aspects of the client's pre- and post-injury vocational skills, etc. into a comprehensive analysis of present vocational limitations and assets. In most cases an estimated percentage of vocational disability would be assigned. If several center services are used, the vocational analysis report is a summary of the transition center's findings with the client.

Workers Desiring a Job Change (Transition to Job Satisfaction)

Each year many persons voluntarily leave jobs because they do not like the work or because they wish to be employed in a job they see as liking better. Included in this group are younger persons just getting started in the labor market and middle-aged workers who are going through career change These persons need to know what their skills and abilities are, what their interests are, and what opportunities are available. The community center can help them find out this information about themselves; the center can also provide counseling to establish goals and directions. The following services would be available:

1. Packaged Complete Assessment - This vocational service would provide the client with a quick, objective view of his/her abilities. The assessment system needs to be flexible enough to handle a wide range of ability levels. The results would be used in counseling and job matching systems. If the client has a proven work history in skilled, technical, managerial, or professional employment this service may not be needed.

2. Interest Assessment - Interest assessment provides the client with a general view of his/her interests and how they relate to general groups of occupations. The center should use adult interest instruments that provide a coverage of the entire labor market. In other words, do not make any assumptions about the interests of this group of clients.

3. Occupational Exploration - Closely related to interest assessment, occupational exploration provides the opportunity for clients, who have experienced only a small segment of the labor market, to discover exactly what careers are available and what entry level qualifications are needed. A full range of opportunities should be presented, including non-traditional job areas. Special emphasis will be placed on transfer of skills analysis.

4. Vocational Counseling - This service centers on exploring new needs and life styles and then developing vocational plans that meet these needs.

Emotionally/Mentally Disabled (Transition from Existence to Living)

Recent years have seen the deinstitutionalization of mentally disabled persons and a subsequent increase in community based programs for these persons. Yet, traditionally mentally disabled populations have been one of the most difficult populations to serve within the state-federal vocational rehabilitation system (Beley and Felker, 1981). The community transition center is seen as having a role in the rehabilitation of many emotionally/mentally disabled adults. Because of the nature of the disability, provision of services to this population requires a close working relationship between evaluator and psychologist. The following services are suggested:

1. Packaged Complete Assessment - In order to reduce the amount of time that the client spends at the center and, therefore, the amount of stress, a packaged complete assessment is one way to quickly obtain the needed information. However, if the evaluator feels that the client needs more time or has problems with concentration, the assessment can be administered a few sections at a time, separated by breaks.

2. Work Behaviors and Attitudes - This assessment determines if the client presently possesses the work behaviors needed for competitive employment. Some of the behaviors to be considered are: work pace, ability to deal with interruptions, coping with stress and frustration, quality and quantity of production, and interaction with staff. It is suggested that this assessment focus on behaviors at the expense of attitude measurement. Although a short period of assessment cannot replace longer situational assessments, this approach should be tried. If the client is not able to benefit from this assessment, referral to a more lengthy situational assessment program is suggested.

3. Psychological Assessment - The major purpose of this service for most mentally disabled persons is not to decide on a diagnostic label;

> these do not provide sufficient insight into the dynamic factors of the client's disability and the related functional limitations or future training potential and work behavior. Only an in-depth psychological evaluation that specifically focuses on the vocational implications of the client's disability can provide such necessary information (Beley and Felker, 1981, p. 195).

The psychological assessment should be partly based on the behaviors reported by the evaluator; the client's consistency of behavior should be a major consideration.

4. Vocational and Educational Counseling - This service combines the results of the above three assessments into practical advice for selecting the appropriate career, occupation, or training. Counseling would emphasize a realistic assessment of limitations and strengths, and a self-monitoring of emotions and behavior. If emotional support is needed after placement, periodic group counseling could continue as a type of support group.

Displaced Homemakers (Transition from Home to Work)

In the last several years a new category of disadvantaged has become evident, approximately three to four million displaced homemakers. They are women who stayed at home and performed the job of homemaker, but between the ages of 35 to 64 could no longer continue solely in that role and survive (Sommers, 1976). These are women who suddenly became displaced in their middle years because of widowhood, divorce, or loss of their family income. Because these women frequently need a variety of vocational services, they are prime candidates for the community transition center. Smith (1977) surveyed women reentering the job market and found that the following services were needed: (1) vocational evaluation, (2) how to look for and apply for jobs, (3) learning job skills, (4) refresher course in job skills, and (5) assertiveness training. In a survey of 101 resource and counseling centers Haugli (1979) reported the top five needs to be: (1) how to look for jobs, (2) how to apply and interview for jobs, (3) career counseling, (4) work evaluation, and (5) assertiveness training. Several of the community center's programs are designed to meet these needs:

1. Packaged Complete Assessment - This vocational service would provide the client with a quick, objective view of her abilities. The assessment system

needs to be flexible enough to handle a wide range of ability levels. The results would be used in counseling and job matching systems.

2. Interest Assessment - Interest assessment provides the client with a general view of her interests and how they relate to general groups of occupations. Because this group of clients has a diverse background, ability, and educational level, the center should use adult interest instruments that provide a coverage of the entire labor market. In other words, do not make any assumptions about the interests of this group of clients.

3. Occupational Exploration - Closely related to interest assessment, occupational exploration provides the opportunity for women, who may have been isolated from the labor market for years, to discover exactly what careers are available and what entry level qualifications are needed. A full range of opportunities should be presented, including non-traditional job areas. Because many displaced homemakers will have to work while obtaining additional training, the center should have information about part-time training opportunities.

4. Vocational and Educational Counseling - In order to make decisions, develop self-confidence, and effectively plan for the future, the above three services will be followed by vocational counseling. Based on the two studies cited above, assertiveness training should be included in these counseling sessions. Other content would include the addition of the new role of worker, balancing various roles, deciding on immediate plans and long-range goals, and developing self-worth.

5. Job Seeking Skills - In addition to the usual content of job seeking skills programs, other materials should be added for displaced homemakers. The most important is a complete review of the woman's assets related to the homemaker role. An older job skills manual by the Multi Resource Center (1971) offers five possible asset areas: (1) leadership, activities, or offices held in scout groups, church groups, PTA, political groups, etc.; (2) home employment, such as child care, craft items for sale, and assisting in operating the family business; (3) volunteer work or involvement in community activities; (4) continuing education; and (5) hobbies, such as cooking, reading, photography and artistic pursuits. A second consideration is determining what questions can legally be asked of a job applicant about child-care, living arrangements, and other non-work responsibilities (Von Volkli et al., 1982).

Welfare Recipients (Transition to Independence)

The present emphasis on assisting welfare recipients to obtain employment could provide many referrals to the transition center. Because an unfortunately large percentage of this population are women, some of the services and problems may overlap with the displaced homemaker group discussed above. The following programs could be offered to this group:

1. Literacy Assessment - Because literacy skills are absolutely necessary for many jobs and almost all formal training programs, they need to be determined before additional education and/or training can be considered. Also, if remedial education services are provided, literacy assessment is necessary

to determine if the client would require this training. Literacy assessment should concentrate on reading comprehension and the attainment of basic mathematical skills.

2. Aptitudes/Skills Assessment - The use of standardized aptitude batteries, such as the GATB, would be needed to estimate the client's basic vocational aptitudes. The assessment of these basic aptitudes provides data that can be used in job searching and counseling. The resulting scores would be used in job matching programs and, if needed, in vocational counseling. At minimum, the 11 DOL aptitudes should be measured. If the client has a definite interest in these areas, an assessment of mechanical, sales, and clerical skills would prove useful.

3. Work Behaviors and Attitudes - It is a common observation that the longer a person is removed from work, the greater the deterioration of his/her work habits (Rasch, 1985). This is especially true if the client has minimal employment prior to being on welfare. In order to identify problems that may interfere with future placement and employment, the client's attitudes and behaviors may be evaluated. The results can be included into vocational counseling and maybe into job seeking skills.

4. Job Matching Systems - Information on the client's literacy level (i.e., GED), aptitudes/skills, and interests (i.e., GOE) form much of the input in a job matching system program. The job matching system would provide data on two separated functions: (1) existing or available jobs for which the client is qualified and (2) jobs for which the client demonstrates the aptitudes and interests to perform, but lacks the training. In most programs, the job list would have to be divided into these two categories either by the evaluator or client. Information presented to the client is useful for planning for immediate employment or training followed by employment.

5. Vocational and Educational Counseling - In order to make decisions, develop self-confidence, and effectively plan for the future, the above three services are followed by vocational counseling. Assertiveness training is included in these counseling sessions. Other content would include the new role of worker, balancing various roles, deciding on immediate plans and long-range goals, and developing self-worth.

6. Job Seeking Skills - In addition to the usual content of job seeking skills programs, other materials should be added for persons on welfare; this additional material would be similar to the Multi Resource Center (1971) suggestions given above.

Juvenile Offenders (Transition to Responsibility)

Each year many thousand of juvenile offenders are released from correction facilities. In addition, about 23% of all juvenile offenders remain within the community for correction services (Wilson, 1978). Despite an ever increasing attempt to provide educational and vocational services to this population while in prison, most juvenile offenders do not receive vocational training (Day and McCane, 1982); neither do most return to school following their release (Karcz and Sabatino, 1986). Nuttall (1977) investigated the vocational training of this group while incarcerated and found a lack of prevocational preparation, such as work readiness and career exploration.

If these problems were not severe enough, it has also been demonstrated that many youthful offenders are handicapped and have low academic achievement records. Morgan (1979) found that "The total percentage of incarcerated handicapped children was 43%. The most common handicapping conditions were emotional disturbance (16%), learning disabilities (11%), and educable mental retardation" (as quoted in Karcz and Sabatino, 1986, p. 206)." A more recent estimate is that 23% are handicapped, as defined by P.L. 94-142 (Karcz, in press). McDermott (1982) examined the academic performance of incarcerated youth and reported that they were two to four years below their academic achievement expectancy levels; similar results have been reported by other researchers (e.g., Mauser, 1974).

The community transition center can provide vocational assessment and counseling services to this population. These services are seen as being offered immediately after release from incarceration or after entry into a community-based corrections program. The presence of this high percentage of juvenile offenders with disabilities implies that many could be adequately served by professional vocational rehabilitation personnel. The following services could be offered:

1. Literacy Assessment - This is needed to determine the client's ability to read vocationally related materials. Included in this assessment would be basic reading abilities with an emphasis knowing common work and community related words. If the offender is considering returning to public school or attending a vocational-technical school, his/her overall reading level and reading comprehension should be determined. The assessment of mathematical skills should be vocationally orientated.

2. Aptitudes/Skills Assessment - A basic aptitude assessment is needed prior to any vocational planning or placement in a training program. Given the low reading levels of the group, aptitudes could be measured with low reading or non-reading tests. Dexterity and motor coordination tests may also prove useful.

3. Interest Assessment - As with other populations, juvenile offenders need jobs that interest them. The use of picture and/or low reading level interest inventories are useful in determining interests. These results, combined with aptitudes/skills assessment results, would be used to find suitable employment or training.

4. Occupational Exploration - One of the problems with all high school students appears to be a lack of realistic information about occupations. It is expected that a youthful offender's information needs would be greater than those of other young persons. Occupational exploration would concentrate on jobs within the client's ability levels. Work samples are probably more effective with this group than printed information and activities requiring significant writing.

5. Job Seeking Skills - If the offender decides not to continue his/her formal education, then this service should be offered. Emphasis is on locating a job within his/her skill level and interest. Special help may be needed to explain gaps in education, etc. caused by incarceration.

6. Independent Living Assessment - If the offender is handicapped by a learning disability or mental retardation, he/she may need an independent living assessment before returning to the community. One of the growing trends

in corrections is the use of half-way houses (Blackmore, 1980). Because independent living would be the next logical step for this group, an independent living assessment may be appropriate prior to release from the half-way house.

Unemployed (Transition Back to Work)

The transition center would also provide services for persons who are temporarily unemployed. Included in this population are persons laid off, terminated, or temporarily employed. This group is seen as being willing to return to work at the earliest possible date. The Unemployed differ from the Workers Desiring a Job Change group described above in that the unemployed did not seek a job change. Although these persons would not require a large number of services, the following three are useful:

1. Packaged Complete Assessment - This vocational service would provide the client with a quick, objective view of his/her abilities. The assessment system needs to be flexible enough to handle a wide range of ability levels. The results would be used as input into job matching systems.

2. Job Matching Systems - Information on the client's literacy level (i.e., GED), aptitudes/skills, and interests (i.e., GOE) form much of the input into a job matching system program. The job matching system provides data on two separate functions: (1) existing or available jobs for which the client is qualified and (2) jobs for which the client demonstrates the aptitudes and interest to perform, but lacks the training. In most programs, the job list would be divided into these two categories either by the evaluator or client. Information presented to the client in this manner is useful for planning for immediate employment or training followed by employment.

3. Job Seeking Skills - If the client has been off work for a lengthy period of time, job seeking skills may be needed. A job seeking skills program developed by State of Washington, Department of Labor and Industry for injured workers could also be used for non-disabled workers (Von Volkli et at., 1982).

Alcoholic and Other Drug Addition (Transition to Freedom)

Abuse of alcohol and other mood changing chemicals is a major national problem. Numerous surveys on alcohol abuse have found that "the overall incidence of alcoholism in the general population is estimated to be 8 to 10 percent" (Rehab Brief, 1982); these are considered to be conservative estimates. The same article reported that between 25 and 30% of disabled persons abuse alcohol and/or drugs. Many AODA persons require vocational services because of unemployment, underemployment, and the need to change careers. Although vocational rehabilitation services are needed by many in-patient and out-patient treatment facilities, Hubbard and Henrick (1981) reported that "less than one in five clinics could identify vocational rehabilitation specialists, job counselors, or job developers on their staff" (p. V). This lack of vocational services offers an excellent opportunity for the community center to provide these services in conjunction with local AODA treatment facilities and programs.

As with other disability groups, this population is not uniform in its needs. Vocational services must be decided on an individual basis.

> To apply a single approach to counseling, therefore, would be a mistake. In deciding the form of the vocational counseling, a number of factors must be taken into consideration. These include the age and sex of the client, occupation before and during the period of heavy drinking, and changes in the self-concept as a function of recovery, education, and maturation" (Reichman et al., 1979, p. 192).

In an article describing vocational training programs for women drug abusers, Ramsey (1980) found that women "needed more extensive job placement assistance during their reentry stage than do male drug abusers" (p. 219).

A brief review of the literature in this area revealed that many recovering persons need a variety of vocational services. A survey of opiate addicts on needed ancillary services found that "job help" was the most frequent needed service (Hargreaves, 1980). Melancon and Panky (1981) reported on the need for vocational exploration. Vocational assessment, vocational counseling, skill training, placement, and job development services were reported as being provided by the relatively few treatment programs offering vocational services (Hubbard and Harwood, 1981). Based on the above cited studies and others (e.g., Duckert and Aasland, 1980; Stevens and Tornatzky, 1976; and Smith, 1981), the following services could be provided to recovering AODA persons:

1. Packaged Complete Assessment - This vocational service provides the client with a quick, objective view of his/her abilities. The assessment system needs to be flexible enough to handle a wide range of ability levels. The results are used as input into job matching systems. If the client has been out of the labor market for a considerable amount of time or has been functioning on a low-level job, the center should consider a more detailed assessment to include: literacy skills assessment, abilities/skills assessment, interests assessment, and maybe physical capacities assessment.

2. Work Behaviors and Attitudes - If the client has a history of marginal employment resulting from an alcohol or drug problem, behavior and attitudes should be assessed. Other recovering persons, especially young persons and women (Reed et al., 1982) without a work history, may need this assessment to determine if they are ready for competitive employment. If not, the center should consider referral to a work adjustment program. In order to identify problems interfering with future placement and long term employment, the client's attitudes and behaviors must be assessed. The results are useful in vocational counseling.

3. Occupational Exploration - Occupational exploration provides the opportunity for the client isolated from the labor market to discover exactly what careers are available and what entry level qualifications are needed. A full range of opportunities should be presented. Because many members of this group will have to work while obtaining additional training, the center should have information about part-time training opportunities.

4. Vocational and Educational Counseling - In order to make decisions, develop self-confidence, and effectively plan for the future, the above three services will have to be followed by vocational counseling. Reichman et al. (1979)

suggests that there are four types of alcoholics who seek vocational counseling:

1. Post-sobriety Goal Setters - These individuals had no career plans before and during their drinking period, but, during early sobriety, have recognized the need for career goals.

2. Inappropriate Career Goals - These individuals had career goals before sobriety that were unsatisfactory or unrewarding. In sobriety, whether the goals are the same or different, they remain inappropriate.

3. Uninterrupted Career Pattern - These individuals has satisfying careers during their drinking and pre-alcoholic stage, and desire to resume their career now that they are sober.

4. Dead-End Flounders - These individuals had no career goals before, during, or after their alcoholism. They have little desire to set upon a career now that they are sober. (pps. 192-193).

Counseling could center upon providing specific assistance to these four "types".

5. Job Seeking Skills - If the client has been removed from the work force or has been underemployed in the past, he/she may require job seeking skills training. For some AODA persons this will be the first step toward independence; this may be especially true for recovering women (Ramsey, 1980). The program should focus on overcoming an often poor employment record and obtaining a job that does not place the client in undue stress.

This chapter has provided an outline on the specific transition center services that may be useful for various client populations. As was stated in the beginning of the chapter, these services are only suggestions; each client must be considered as an individual.

CHAPTER 8

The Service Process

The first several chapters of this book provided information on how to establish the community transitional center, the services to be offered, and some of the populations that could benefit from these services. The parts needed to establish the center have been described; this chapter provides some ideas on the process used to combine these parts into a series of practical programs for clients and their referral sources.

The suggested flow process and the procedures given here are intended to act as guidelines and not as a rigid set of rules or policies. Although we have emphasized that the community center is to provide specific services in a short period of time, we have also stressed that each client is a unique person and should be treated as such. Therefore, the process described below must respect the needs of the individual client.

Referral Procedures

All services are initiated through either a referral source (i.e., third party payee) or self-referral. Although some self-referrals are anticipated, it is expected that most referrals will come from third party payees, who have previously been approached by center staff. When a client is referred to the center, the center needs two major types of information: (1) the services to be provided and (2) all relevant client records.

An established referral source will know the center and what services are to be provided. For example, an insurance carrier who refers several disabled workers per month should know what services are needed and what the results will be. These referral sources simply would list the services to be provided, preferably with brief justification or reason for each.

Dealing with a new referral source, however, requires an educational process by the center. The referral source needs to know what services are available, what they include, what they cost, what type of reporting and feedback is available, and how long they will take. Staff should describe the functions of the center, relating each to the needs of the referral source. Each service is to be explained in terms of

outcome (e.g., determination of literacy levels) or product (e.g., a final report or a client who knows how to find a job). In order to maintain clear communications, these services should be described in functional terms. It's the staffs' responsibility to listen carefully to the needs of the referral source and then to offer services based on these needs. Do not attempt to oversell the services, and if the referral source requests a service that is not provided by the center (e.g., vocational training), suggest another facility that offers the service or program.

Self-referrals[19] are the final source of clients. Here the same person is both the payment source and the client. When working with self-referrals, center staff must provide simple, accurate, and complete descriptions of the services offered. The cost of each service should be given, and the client told what to expect for that price. Prior to determining specific services, the staff member listens closely to the client's perceived needs. Both client and staff then decide on what services are required to meet these needs. The reporting and feedback needs of the client are also determined at that time.

Relevant client records are also needed at the time of referral. Usually, it is the referral source's responsibility to provide all copies of medical, educational, psychological, etc. records prior to seeing the client for the first time. Often these records contain valuable insights into the client's vocational functioning. These records and the requested services must be thoroughly reviewed prior to seeing the client for the first time. As mentioned in an earlier chapter, there are several reasons for reviewing these records: (1) obtain insight into the needed services and the specific tests, etc. to be administered, (2) get a preliminary "picture" of the client for planning purposes, (3) determine if all relevant information is present, and (4) to prevent duplication of effort. If significant records are not present, center staff should contact the referral source to obtain such information. If recent test results and other data are available for the client, it is not necessary to repeat these procedures.

When the center has the referral information and the client's records, the client is scheduled for the specific services requested. Contact is made either directly with the client or through the third party payee, and mutually agreeable dates and times are established.

Intake and Screening

By this time the evaluator has the client records and a list of services to be performed. The next step is to interview the client. The purpose of this interview is to provide the client with information about the program and to allow the staff person to review the services requested. The interview should cover the following points:

1. The reason(s) for referral should be explained to the client. The staff person is to make certain that the client knows why he/she was referred. Get the client's reasons for the referral. If there are any major conflicts between what the referral source wants and what the client needs, the referral source should be contacted.

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[19] Included in self-referrals are parents and/or guardians requesting services for youth and young adults.

2. The client should be told what is expected of him/her while at the center. Rules and policies about smoking, starting on time, lunch breaks, etc. are explained. These rules and policies could be explained to small groups of clients.

3. The client has a right to expect certain behaviors from center staff. The client's right to confidentiality, honest feedback, participation in decision making, and respect for the client as a unique individual should be communicated to him/her.

4. This interview is also a screening device to intercept those for whom the center's services are not applicable at this time. Although the limitations on what populations could be served should be known to the referral source, center staff should not take for granted that each client meets the entry requirements. Persons using illegal drugs and intoxicated would not be served by the center. Persons who are apparently overly medicated to the point that their mental abilities and coordination are impaired would not be served. Although the center provides independent living assessment, clients would have to have basic personal hygiene skills. Overtly psychotic, hostile, and acting out clients would not be served. Finally, severely mentally retarded persons are seen as benefiting from long term, more flexible programs. If center staff decide that a client will not benefit from the center's services at this time, the client and the referral source should told immediately and the reason(s) given in clean, concise terms.

By the end of the interview, the staff person would decide: (1) If the client could benefit from the center's services and (2) if the type of services requested is appropriate. Although the center actively seeks out various client referral sources, the center must reserve the right not to provide services to persons who would not benefit from these services. To do otherwise would undermine the professional ethics of the center. This right to refuse service should be stated to each referral source.

Center staff can agree or disagree with the services requested by the referral source. If they believe that the client requires an additional service or does not require a requested service, they have the professional responsibility to make that known to both the client and the referral source.

Once number and order of services are decided, the staff person makes the necessary scheduling changes and informs the client of his/her schedule of services.

Provision of Services

During this phase the scheduled services are provided. The client is administered various assessment devices, encouraged to explore occupational areas, provided job seeking skills, etc. according the procedures described in Chapters 5 and 6. Obviously, this is the heart of the process. Although each service is unique, there are certain procedures that must be included in each service: (1) Briefly explain the purpose of each service to the client, (2) Provide the client with general feedback of his/her performance on each assessment device, and (3) Attempt to motivate the client to perform at his/her best.

Debriefing and Decision Making

After all services are provided, center staff provide the client with a verbal summary of the assessment results. The procedures used in services (e.g., literacy assessment), their purpose, and their results are communicated to the client in language he/she can understand.

Often the assessment information leads to the conclusion that other services, such as literacy training, vocational education, training in independent living, and medical services, are needed. The client and the referral source should be informed of these needed services. In most cases, recommendations for additional services should be discussed with the client. All recommendations are included in any final reports. For example, if a supported work program is recommended, the center report may include the names of various supported work programs within the clients' geographic area or programs serving a specific type of disability or population.

Reporting

One of the major products of the community center is the final report for each client. The length and content of this report depends on the services provided and the context in which the client was referred. If warranted, the center may develop special reporting formats to fit the needs of a particular referral source.

Although it is beyond the scope of this publication to discuss the types of reports, most reports will contain the following sections: Description of the client, reasons for referral, services provided, results of each service, and specific recommendations for future actions. Specific recommendations would include: direct placement in a particular job or job cluster, referral for additional services (e.g., supported work), short range objectives and long term goals. If specific jobs are included, the appropriate DOT title and code should be used.

Although report writing is a basic competency required by evaluators and other staff, many persons have problems preparing useful reports (Thomas, 1986; Coffey, 1977). The community center will have to develop reporting techniques that are accurate, easy to read, and yet do not require a large amount of staff time. One possible solution is to develop a computerized report format. Certain sections of the report (e.g., descriptions of tests and explanation of procedures) would be boiler plate and would not have to change. Other sections, such as demographic, employment history, and educational history, could use a "fill-in-the-blank" format. Because the recommendations are the most important part of the report, they should be written with care and skill. Detailed information on report writing can be found in Report Writing in Assessment and Evaluation by Stephen W. Thomas.

This chapter has provided a short introduction to the service provision process. Because each center will have to develop its own procedures, the content of this section has been kept purposely general. Before beginning to serve clients, transition center staff will need to develop complete procedures. They will also estimate the amount of time needed for the initial interview and report writing. This time would be translated into the cost of services.

CHAPTER 9

Program Evaluation of the Community Vocational Center

Program evaluations are conducted for many reasons, but all the reasons have one thing in common: they are questions about past performance. The questions initially may be vague, such as "What outcomes were achieved by the community vocational center?" or "Is the center meeting its goals?"

Program Evaluation Types

Three types of evaluations can be conducted to help community vocational centers analyze their operations. They are: formative evaluations, summative evaluations, and needs assessment. In addition, many different models of program evaluation can be employed. The models are variations of two program evaluation approaches: the objective attainment approach, and the systems analysis approach.

In all cases, data to support an evaluation are obtained from research. The investigative research that is conducted utilizes one of three broad tactics: experimental research, correlational research, and case studies.

Formative Evaluations - Formative evaluations are developed to answer broad questions such as: "How can the center be improved?" or "How can the center become more effective and efficient?" Thus, a formative evaluation makes use of evaluation data to further develop the center's services. These evaluations tend to be ongoing in nature. After the evaluation system is in place, data that describe the status of the center are continually obtained.

Formative evaluations usually require the collection of a large amount of diverse data. To improve a center, it is necessary to understand how well the center is moving toward its objectives so that changes can be made in its components. Thus, formative evaluation is time consuming.

Summative Evaluations - In a summative program evaluation, the emphasis is on center effectiveness or outcome and the adequacy of service performance or quality. The evaluation task is to make "summary" judgments about the center services and

their value. This usually leads to decisions about the continued operation of the center.

To make judgments using a summative evaluation, it is necessary to compare the data gathered during the evaluation with another center aimed at achieving similar goals. If no rival center can be evaluated, the evaluation data could be compared with other organizations that provide similar services.

Summative evaluations are usually terminal or "one shot" efforts mounted to answer questions such as: "Is the volume of referrals adequate to sustain the center?" or "Can we attribute the high rate of successful vocational placements to the provision of center services?" Summative evaluations may also be called outcome evaluations, consumer testing, or evaluation research.

Needs Assessment - Many requests for program evaluation actually require a needs assessment. Questions such as: "What should the center try to accomplish?" or "What areas of the center marketing plan should be changed?" are really questions regarding the discovery of weaknesses or problem areas in the center. These questions are best investigated by a needs assessment rather than a formative or summative program evaluation because the resulting report is used for long term planning rather than immediate change.

Objective Evaluations - Many organizations routinely use the objective or goal attainment approach to determine if their activities are successful. This approach may be used for the evaluation of centers as well. Using the objective attainment approach, center investigators ask if the center has accomplished what it was designed to accomplish in terms of meeting the needs of non-traditional markets for vocational assessment.

The logic behind the approach is sound; the center is evaluated on the basis of meeting predetermined objectives. In practice, however, the application of the goal attainment approach is not as cut and dried. It is important to emphasize that an evaluation based on an attainment approach will not be able to clearly state that the center alone is responsible for the attainment referral population goals.

Systems analysis - The systems analysis approach focuses on the analysis of center processes to arrive at a judgment of its value. The effectiveness of a center, thus, is not determined only in relationship to stated goals, but also in terms of its contribution to the functional operation of the entire facility.

The systems analysis approach to program evaluation relies on the gathering of very large amounts of data. Thus, the popularity of the approach has grown with the proliferation of personal computers and the trend toward gathering large amounts of data for "accountability" purposes.

Data accumulated for evaluating centers using the systems analysis approach is useful, in sophisticated community vocational centers, for the projection of outcomes under varying conditions. Thus, systems analysis allows the evaluation to be predictive, providing a valuable planning tool to center administrators.

Planning for Evaluation

"Stakeholders" are individuals or organizational groups that have an interest in the outcome of an evaluation.

Because the type of evaluation desired, the approach chosen, the model selected, the questions asked, the objectives measured, the comparison criteria selected, the research design used, and virtually every other facet of the evaluation design will require judgments that will effect the results obtained by the evaluation, all stakeholders need to be provided with input into the planning and implementation of a program evaluation. If, in fact, they are denied a voice, they may discount, disbelieve, or ignore the results obtained. Thus, representatives of all groups that will be affected by the evaluation of the center should be included in the initial question formulation stage

Examine the Center's Objectives - Objectives are often used as the statements tested by evaluation research. Evaluations need to discriminate among several different types of objectives. They include: process objectives, outcome objectives, and management objectives.

Objectives are specific statements of the results a center intends to achieve. They are the statements from which measures are derived, thus they must be stated in terms of the ultimate results or outcomes which the center should achieve as a result of the services provided. Objectives must reflect both effectiveness and efficiency measures. Effectiveness measures tell evaluators how successful the provision of services has been.

Determine the Measurement Level - Measures are best stated in terms of real numbers, averages, percentages, time, or money. They should clearly reflect the method you will use to describe the provision of services that meet your objective. There should be no grey areas. The objective either fits the criteria for measurement or does not fit the criteria for measurement. This gives stakeholders solid grounds for agreement on the actual amount of services that have been measured. Cook and Cooper (1978) state that measurement is the process of converting evaluation information into data that can be objectively interpreted.

Measurement can occur on four different levels. Assumptions for each level allow successively more accurate analysis methods to be used to interpret evaluation findings. These measurement levels are: nominal scale, ordinal scale, interval scale, and ratio scale.

Nominal - Nominal scales are the simplest. They are classifications (groupings) of people, things, or other units. Even when numbers are used to represent different classifications, relationships do not exist between the separate classifications. Thus, no numerical analysis of the numbers can be made. For example, a nominal scale may be used to classify people as: (1) amputee, (2) paraplegic, (3) blind, (4) mentally retarded, and (5) other. If all clients were assigned these nominal numbers, determining an average or any other statistic using the 1 - 5 scale would give no meaningful data. Additionally, nominal scales do not have zero points.

Ordinal - Ordinal scales improve the nominal scale. They can be used when some degree of relationship exists between units. Ordinal scales are often used to describe subjective data. For example, if we asked clients how satisfied they

were with the training they received, we may classify their answers on a scale of 1 to 5 with very satisfied being one and very unsatisfied being five. However, the amount of satisfaction between 1 and 2 is not necessarily the same as between 3 and 4. Thus, conclusions drawn from such data need to be carefully considered. Additionally, ordinal scales may or may not have a zero point.

Interval - Like ordinal scales, interval scales assume a direct relationship between scale units. Unlike the ordinal scale, interval scale units are equally separated. The amount of change from 1 to 2 must be equal to the amount of change from 4 to 5 and for any other full unit within the scale. Additionally, interval scales do not have a zero point. For example, IQ tests use interval scales and do not have zero points. To have zero IQ is to be unable to take the test (dead). Much of the objective data obtained for program evaluation can be placed on an interval scale.

Ratio - The highest level of measurement is the ratio scale. Like the interval scale, intervals between units have a direct and proportional relationship between themselves, but ratio scales always have a zero point. Thus, the data that is collected using a ratio scale must be capable of not existing.

Determine Data Gathering and Analysis Methods - Another important area to consider when choosing measures for evaluation goals and objectives is the data gathering tactics and the analysis techniques that will be employed after data is gathered. Evaluators can employ the tactics of experimental research, correlational research, and case study to gather their evaluation data. They can employ a wide variety of analysis techniques including multiple regression, chi-square, systems analysis, hypothesis testing, and sign tests to determine the meaning of the gathered data. All these tactics and techniques influence your data gathering techniques.

Set Time of Measurement - Time of measurement is the point in time when outcome information is collected. It is important that the time of measure be made in relationship to the center flow and the objectives to be measured. You must be sure that the time of measurement is clearly specified to ensure that the center activities truly impact on the outcome.

The Collection of Evaluation Data

Evaluations of all types rely on the comparison of factual data to arrive at conclusions. They, therefore, can use the scientific method to assure that conclusions can stand public inspection.

The scientific method is the systematic collection of factual data by objective observations to answer measurable questions. The difference between program evaluation research and traditional scientific research is that evaluation research must be used for decision making to justify expenditures of time and energy. Traditional scientific research may be performed for purely esoteric reasons.

Research Tactics - Evaluation researchers use three tactics to implement the scientific method. They are: experimental research, correlational research, and case studies. Brief descriptions of these tactics are provided below.

Experimental Research - Experimental research is the gathering of factual data to prove or disprove a hypothesis. The hypothesis is a tentative solution to the

evaluation question. For example, if a center is evaluated to determine its effectiveness at providing assessment services to a non-traditional population the hypothesis might be stated: Ninety-five percent of the non-disabled persons referred to the community vocational center were employed in an area related to their assessment recommendation within three months of service completion.

To investigate this hypothesis using a scientific approach, it is necessary to randomly choose cases to be evaluated using a random sampling technique that allows all non-disabled referees to be equally likely to be examined. This random selection helps reduce possible reasons for some referees to be successful.

Note that the hypothesis included a clearly defined measure of success. (Employed in an area related to their assessment recommendation within three months of service completion.) If the hypothesis does not clearly define this parameter, it will be necessary to choose a clear measure to apply to all cases. The measure must be quantified before data collection can proceed.

In the language of researchers, the measurement is called the dependent variable because the data gathered will be dependent on the program from which it is gathered. Each individual case is called an independent variable.

Correlational Research - Correlational researchers attempt to find associations or relationships between program components, other programs, and operating environments. This type of research does not provide any implication of cause. That is, a correlational study does not establish a hypothesis against which the data from dependent and independent variables are compared.

Case Studies - The case study is probably the most widely accepted data gathering tactic used by program evaluators in rehabilitation settings. In the case study tactic, existing data files on the center activities are examined to generate the data for use in making scientific comparisons. This tactic has many data gathering flaws that cause problems of interpretation for evaluators. The data are easily "contaminated" rendering any finding suspect. However, especially when ongoing collection systems are in place, this approach may be the least costly of the research tactics.

Procedures to Insure Accuracy - For evaluators to accurately interpret the data obtained using any of the above tactics, procedures must be developed to insure that the data that are collected include all possible variables, and/or identify single variables with precision.

Collection of all data points is not necessarily the most accurate method, though the proponents of the ongoing collection of data often cite accuracy and completeness as a reason for the expenditure of time and effort. In fact, the global gathering of data for use in the evaluation of a center may not only be a waste of data collection resources, it may actually be less accurate than representative sampling. This is true because more people are involved in global data collection, leading to a greater possibility for contaminated (not recorded correctly) data.

Statistical Sampling - To insure that data samples are representative of the total data pool that is to be measured, samples must be randomly chosen to give each pool unit an equal chance of being chosen.

Random samples that accurately reflect the population that they represent, have three advantages over the collection of data from the population total:

1. They provide real time and resource saving with little loss of accuracy because data is less likely to become contaminated.

2. They can produce more timely results because the time of sampling can be quickly determined and the data quickly collected.

3. They give program administrators more flexibility in the evaluation questions they ask because of their increased dollar and hour efficiency.

Using a random number table is one of the easiest methods of selecting a random sample. All population units are first assigned a sequential number. Then, the evaluator chooses any point on the table to begin listing numbers. If the population contains less than 100 units, only two digit numbers are chosen; if less than 1000 units, only three digit numbers, etc. Any number that is greater than the population total is discarded. Numbers continue to be selected by reading down or across the table until the total needed for a representative sample has been reached. Then the randomly selected numbers are matched to the corresponding numbers assigned sequentially to each population unit.

Some statistical software programs are designed to produce random numbers. This may be the quickest way to match a randomly selected number to a population unit. Sequential numbers are assigned to population units. The computer selects the representative sample, and the randomly selected numbers are matched to the corresponding number assigned sequentially to each population unit.

If only small samples are needed, it may be feasible to draw numbers out of a hat or some container to obtain a random sample. The trick is to insure that all units are equally represented and that each unit has the same chance of being chosen as part of the sample as all other units.

Another key to insuring that samples are representative is to accurately determine the number of units that must be included in the sample. Two processes for estimating the most accurate sample size are used. One is principally employed when the program evaluation question can be phrased such that the measurement obtained through the data gathering process will result in a population proportion figure. The other process is employed when the data gathering process results in a mean (average) figure.

Frequency Distribution - The conversion of raw scores to group centered scores is a standardization process that allows data to be more easily compared with other groups. Several standardization methods will result in the expression of data in the form of a frequency distribution. They include: percentile ranking, histograms, and frequency polygons. Frequency distributions are representations of data based on their relative numerical groupings.

One of the most common ways used to represent individual scores in relation to groups is to indicate the percentile ranking of the score. Percentile ranks are sometimes converted into cumulative rankings to indicate the actual location of a score within a large mass of data points.

Histograms are similar to percentile rankings because they also rank data from lowest to highest. However, histograms visually place the data into five to fifteen "ranges" allowing multiple individual scores to be more easily assessed. Each data range must be equal to all other data ranges. The size of each range is determined by the number of ranges and the size of the population. Building a histogram from the rankings, we create a visual representation of the data that will allow us to clearly see the variance within the program.

Another method of raw score standardization is the computation of a standard score. Several methods are used. One popular method is the percentile rank. Especially useful in the development of standard scores, a percentile ranking method is the use of cumulative percentiles. Standard scores using the above methods convert each raw score into a score that can be related to other scores in the same group.

The computation of a derived score is yet another method for determining a standard score. A derived score differs from a group centered standard score in that it provides standardization that allows comparisons between studies. Two easily computed standard scores are in common use: the Z score and the T score.

The Z score transformation converts a raw score into a score that reflects the raw score's relationship to the group norm. This relationship is expressed as a figure that indicates how many standard deviations the raw score is from the group's mean. Thus, deviation from the mean can be compared for scores from any group.

Because deviation from the mean can be positive or negative, Z scores can also be positive or negative. In addition, it is rare to find score deviations that greatly exceed three standard deviations from the mean, therefore, Z scores usually range from -3.0 to 3.0 with 0.00 indicating the mean.

Based on the Z score, the process for determining a T score is designed to eliminate both decimals and negative numbers.

After a Z score has been determined, it is multiplied by 10. To the resulting product is then added 50. This creates a standard score distribution from about 20 to about 80 with 50 as the mean.

Evaluation Research

Some evaluation questions will require the use of traditional research designs to interpret the collected data and provide answers. It may not be sufficient to simply know what happened and outcome data can only provide information on what happened.

Of paramount concern for any center administrator is the need to tie the outcome data, easily obtained from ongoing data, to the completion of center services. For example, if a client achieves a work related goal, can the center legitimately claim that the goal was achieved because the client received services at the center. It may be possible to use existing outcome data with traditional research design to show that the increase can be attributed to center services.

Traditional Research Design - Traditional design relies on several levels of experimental research methods that incorporate the above research tactics. The evaluator must choose the level of design that best balances their need for valid data

with their data collecting capabilities. Three traditional designs are usually cited. They exist not as discrete entities, but as levels on a continuum. These designs are pre-experimental, quasi-experimental, and true experimental designs.

Pre-experimental models can simply be called outcome or descriptive evaluations because the intent is only to describe a program not to infer correlation or causation. The quasi-experimental and true experimental models, however, try to establish correlations and infer causation between the variables under study. They vary only in their ability to control the variables with the true experimental model providing as close to full control over variables as possible.

Many different quasi-experimental models can be created to meet the needs of various facility data collection problems and evaluation question needs. Three types are in common use. They are the single group pre/post test model, the nonequivalent control group pre/post test model, and the interrupted time series testing model.

Single Group Pre/Post Test - As the name implies, this research design is used when no control group is possible. Depending upon the type of information desired, the single group of cases is first "tested" (data collected in some form) prior to their affiliation with the center. After affiliation an identical "testing" (or data collection methodology) is applied to the group. Inferences are then based upon a comparison of the data from each testing. Note that the pre/post test may be an actual test, for example a skill test or productivity test, or it may simply be the collection of descriptive data. The type of data collected is not important. That the same data is collected at both points is important.

Nonequivalent Control Group Pre/Post Test - Just as in the single group pre/post test model, the nonequivalent control group model requires data collection at two points, before training and after training. In this model, however, another group is added as a "control." The control group is "tested" as if they were to receive center services and then "tested" again as if they had actually received the services though they did not receive the services. Thus, such data as the mean increase (or decrease) in test scores between the two groups can be compared. This provides yet another indication that service provision at the center was beneficial (or un-beneficial).

While more powerful than the single group model, the nonequivalent group is still vulnerable to bias on the basis of the way the groups are selected.

Interrupted Time Series - Single or multiple groups can be exposed to the interrupted time series model. In this model, a group(s) is tested several times before and after affiliation with the center. By giving several pre and post "tests" and plotting the results, a linear relationship between the "testing" times can be established. The shape of the line helps the evaluator determine if increases (or decreases) can be attributed to center service provision or some other factor.

Data Analysis Techniques

In every program evaluation situation, data, either outcome or situationally related, must be analyzed, allowing administrators to make inferences about the value of the program under examination. Because the data is most often numerically expressed (the alternative would be an evaluation that reports that a product was cre-

ated or delivered), the analysis is usually of a statistical nature. The easiest way to express the answers to program evaluation questions is to statistically test the truth or falsity of a statement related to the question. This is called hypothesis testing.

Techniques - Many different types of analytic techniques can be used to examine program evaluation data. Many require statistical computer programs and sophisticated knowledge of data manipulation procedures. Others, however, can be simply performed using hand calculators. Three of the simple techniques, sign tests, simple linear regression, and chi-square, are described below.

Sign tests - This is probably the simplest test to use when determining if post-test ratings tend to be greater than pre-test ratings. Thus, for use with program evaluation data, the sign test will quickly help an evaluator determine positive or negative tendencies. The sign test will not tell the evaluator how great a change occurs but will indicate that change has occurred. Evaluators need only a table of critical values to determine a significance level for their findings.

First, the data from each case is listed together with pre-test and post-test ratings. Second, the evaluator determines if the post-test rating is greater or less than the pre-test rating and assigns each case a plus (+) or a minus (-). The number of plus ratings are counted. Third, the evaluator also notes the number of ties and subtracts the ties from the total number of cases. Fourth, the evaluator determines the level of significance that is needed to accurately test the hypothesis. Fifth, using both the adjusted total number of cases and the desired level of significance, the evaluator consults a mathematical table of critical values for sign tests. Finally, comparing the critical value found in the table with the number of plus ratings, the evaluator decides whether to accept or reject the null hypothesis.

Linear regression - Some data may lend themselves to analysis by trend line forecasting. This is particularly helpful when making predictions about client progress, but can also be used to illustrate program and/or facility directional change. In fact, change rate may also be of interest to program evaluators.

One of the easiest and most common linear regression techniques is the "least squares" forecasting method. This method is relatively simple in its use of mathematics and provides good trend line information. The method used is a statistical manipulation of data points. All of the squares (a number multiplied by itself) of these data points are added and reformulated mathematically. The resulting new data can be plotted to illustrate the differences between the statistically determined figures and the actual data. This graphic representation of the trend line data represents the least amount of difference between those data points above the line and those below the line. The line, therefore, can be used to predict, with reasonable accuracy, data for points in the near future.

The linear regression forecasting method employed by the least squares method cannot separate cyclical or seasonal effects on the points plotted on the demand graph. Thus, the data must be "deseasonalized" to give an accurate forecast of trends. (Some program evaluation data points may not be affected by seasonal or cyclic trends. Deseasonalization may not be necessary in that case or in the case of data that is stated in yearly terms.)

The following steps are used for creating data to use in least squares forecasting:

1. Obtain enough historical data to support a regression analysis. If forecasts are to be made with the trend line, twelve data periods (usually months) is usually enough to forecast up to twelve more periods of future data. More data points provide a better forecast. Less can be used, but the results may not be reliable.

2. Insure that the time increments within the data are incremental. That is, each period of time that the data represents should be equal to all the other periods. If you are gathering daily work data, remember that the number of work days in a month will vary. Thus, if the daily data is reflected in a monthly figure, you must adjust the periods to reflect the number of days that are actually worked.

3. Adjust the periods to a common point in time if units may change over time (such as dollars earned). Inflation can give a false picture within a forecast. To guard against bias, relate all periods to a common year.

4. Deseasonalize the data. Because some data figures may be used on a basis that fluctuates seasonally, the data needs to be adjusted to account for these fluctuations if an accurate forecast is to be made.

5. Plot the adjusted data on a time vs. quantity graph.

6. Using the seasonally adjusted data and the least squares regression formulas, determine the trend line existing for the plotted data.

7. Examine the trend line to make predictions about future data.

Chi-Square Tests - The task of a program evaluation may be to determine relationships between different classes of variables. Two primary variations are normally found. In the simplest variation, the data may be represented by a 2 x 2 grid. In more complex situations the grid may contain many cells.

A common relationship that is explored in the center is the relationship between center assessment recommendations and eventual positive placements. A simple chi-square grid for analyzing such a relationship may look like:

Center Recommendations Positive for Placement

Positive placements	YES	NO
YES	A	B
NO	C	D

A more complex program evaluation question may lead to a more elaborate grid structure. For example, we may wish to show that our center recommendations did not abnormally concentrate within occupations. The chi-square grid for analyzing such a complex relationship may look like:

Referral population	Occupational Recommendation				
	Janitors	Assembly	Automot.	Clerical	Food Ser.
Disabled					
Unemployed					
Transition					

It is beyond the scope of this publication to provide full explanations of the application of these three analysis techniques: sign tests, linear regression, and chi-square. However, they are fully explained in the Materials Development Center publication Attributing Client Progress to Training Program Activities.

It is within its scope to emphasize that program evaluation should become an integral part of the community vocational transition center's planning, marketing, and service delivery strategies. For it is only through ongoing self-examination that the center may capitalize and remain on the cutting edge of transitional need fulfillment.

Therefore, with the establishment of program evaluation processes and procedures, the center has "closed the loop" that began with a facility staff member becoming excited about providing evaluation services to the entire community. The investigative work of the feasibility study has been turned into an operating center, and the same investigative work has logically aided in the development of a process that will allow the facility to make community-based operating decisions.

It is the authors' sincere belief that community-based vocational transitional centers will strengthen the workforce in the cities in which they are established, and that they will also (because they will strengthen the workforce) strengthen the businesses and industries of those communities. Thus, they will provide service benefits to all community citizens, not just those with specific vocational transition needs.

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APPENDIX A

Initial Interview Information

Date _____

Time _____

Initial Interview Information

Name _____ Birthdate _____

Address _____

_____

Phone Number ( ) _____ Social Security Number _____

Height _____ Weight _____ Age _____ Sex _____

Personal History

Place of Birth _____

Father's Occupation _____ Mother's Occupation _____

Number of Brothers _____ Number of Sisters _____

Family Health (medical problems of parents and siblings - causes of death and age at death for any deceased family members) _____

_____

_____

_____

Age when left family home _____ Reason: _____

Marital Status _____ Date of Marriage _____

Family Members Living With You:

Name	Relationship	Age	Name	Relationship	Age
Name	Relationship	Age	Name	Relationship	Age
Name	Relationship	Age	Name	Relationship	Age

Living Arrangements: Own Home _____ Amount Per Month _____

Rent Home _____ Amount Per Month _____

Rent Apartment _____ Amount Per Month _____

Share Apartment _____ Amount Per Month _____

Other _____ Amount Per Month _____

Present Monthly Income:

Self - wages/salary _____ Worker's Compensation _____

SSDI _____ AFDC _____ Food Stamps _____

Interest _____

Spouse (give sources and amounts) _____

_____

Debts: Home Mortage Remaining _____

Car/truck Loan(s) Remaining _____

Credit Cards _____

_____

Personal Loans _____

_____

Other _____

_____

SSDI - Date of Application _____ Current Status _____

Worker's Compensation - Date of Injury _____ Current Status _____

Comments: _____

_____

_____

_____

_____

Educational History

	School Attended	Dates Attended	Grades - Courses
Grade School			
High School			
Vocational School			
Business College			
Jr. College			
College			
Grad School			
Other			

Apprenticeships _____ Dates _____

Number of Classroom Hours _____

Have you attended any workshops, seminars, on-the-job training, company sponsored training courses, conferences, promotional courses, group/individual courses or classes of any kind? _____ What kind? _____

_____

_____

Do you hold any licenses, certificates, permits, authorizations, etc., other than a valid driver's license? _____ If so, what kind? _____

_____

Level of Literacy Skills

Reading _____ What Type of Material Read _____

How Frequently _____

Writing _____ Write Letters _____ Shopping Lists _____

Arithmetic _____ Balance Checkbook _____ Complete Income Tax _____

Comments: _____

_____

_____

_____

Employment History

Military Background

Branch _____ Dates of Service _____

Service Schools Attended _____

M.O.S. _____ What Did You Do _____

_____

Rank At Discharge _____ Type of Discharge _____

Service Connected Disability _____ What _____

_____

Past Employment

Company _____ Dates _____ Job Title _____

Job Tasks _____

_____

_____

Physical Demands _____

Final Salary _____ Reason For Leaving _____

Company _____ Dates _____ Job Title _____

Job Tasks _____

_____

_____

Physical Demands _____

Final Salary _____ Reason For Leaving _____

Company _____ Dates _____ Job Title _____

Job Tasks _____

_____

_____

Physical Demands _____

Final Salary _____ Reason For Leaving _____

Company _____ Dates _____ Job Title _____

Job Tasks _____

_____

_____

Physical Demands _____

Final Salary _____ Reason For Leaving _____

Company _____ Dates _____ Job Title _____

Job Tasks _____

_____

_____

Physical Demands _____

Final Salary _____ Reason For Leaving _____

Company _____ Dates _____ Job Title _____

Job Tasks _____

_____

_____

Physical Demands _____

Final Salary _____ Reason For Leaving _____

Present Employment

Are You Working Now _____ Company _____

Date Started _____ Job Title _____ Hours Per Week _____

Job Tasks _____

_____

_____

Physical Demands _____

Salary _____

Comments: _____

_____

_____

_____

Medical History

Family Physician's Name _____

Address _____

Serious Childhood Illness or Injuries _____

_____

_____

What injury/accident/illness did you have that caused your present disability?

Date _____ Where _____ Describe How Occurred _____

_____

_____

Describe Injury _____

_____

Treating Physician _____

Hospitalizations (Nonsurgical)

Dates _____ Where _____

Reason _____

Treating Physician _____

Dates _____ Where _____

Reason _____

Treating Physician _____

Dates _____ Where _____

Reason _____

Treating Physician _____

Dates _____ Where _____

Reason _____

Treating Physician _____

Surgery

Dates _____ Where _____

What Kind _____

Treating Physician _____

Dates _____ Where _____

What Kind _____

Treating Physician _____

Dates _____ Where _____

What Kind _____

Treating Physician _____

Psychological/Psychiatric/Counseling

Dates _____ Where _____

Reason _____

Treating Professional _____

Dates _____ Where _____

Reason _____

Treating Professional _____

Are you presently being treated for any condition?

What _____

Treating Physician _____

Do you use any medically prescribed assistive aid (e.g., cane, braces, hearing aid)?

_____

_____

Presently Taking Prescription Medication

Date Prescribed	Name of Drug	Dosage	Physician	Purpose of Drug

Has your physician placed any restrictions on your activities (e.g., lifting, driving, walking)?

Physician _____ Restriction _____

Physician _____ Restriction _____

Comments: _____

_____

_____

_____

_____

_____

Present Activities

Sleeping Habits: Time to Bed _____ Time Get Up _____

Get Up At Night _____ How Often _____ Reason _____

_____

Activities performed inside home (e.g., cook, cleaning) _____

_____

_____

_____

Activities performed outside home (e.g., cut grass, garden, automobile maintenance)

_____

_____

_____

Present hobbies or sports (e.g., reading, crafts) _____

_____

_____

Previous activities that can no longer be performed (e.g., bowling, hunting) _____

_____

_____

Present social activities (e.g., religious, lodge) _____

_____

_____

Self-Description of Medical Problems

Part of Body	Description of Problem, if any
Head	
Neck	
Shoulders	
Arms	
Hands	
Fingers	
Chest	
Upper Back	
Lower Back	
Hips	
Legs	
Ankles	
Feet	
Other	

Self-Description of Physical Capacities

Activity	Reason for Restriction
Sitting - how long _____ min./hrs.	
Standing - how long _____ min./hrs.	
Walking - how long _____ min./hrs.	
- how far _____ min./hrs.	
Driving - how long _____ min./hrs.	

Lifting - floor level - how much _____ lbs.

- how often _____ hr./day

table level - how much _____ lbs.

- how often _____ hr./day

Carrying - how much _____ lbs.

- how often _____ hr./day

- how far _____ feet

Bending - how far _____ degrees

- how often _____ hr./day

Reaching - front - how often _____ hr./day

- overhead - how often _____ hr./day

Manipulation with hands/fingers

Other _____

Do you smoke? _____ How much? _____ Do you drink alcohol? _____

How much? _____ Do you have a driver's license? _____ Has it ever been

revoked? _____ Suspended? _____ Restrictions? _____

Removed for any reason? _____ Explain any "yes" answers _____

_____

_____

Comments _____

_____

_____

_____

_____

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APPENDIX B

Names and Addresses of Tests, Assessment and Work Sample Developers

Ability Information Systems, Inc.
North 2721 Van Marter, Suite 3
Spokane, Washington 99206
1-800-321-1005

American Guidance Service
Publisher's Building
Circle Pines, Minnesota 55014
1-800-328-2560

American Orthopsychiatric Association, Inc.
19 West 44 Street, Suite 1616
New York, New York 10036
(212) 354-5770

Association of Information Systems Professionals
1015 N. York Road
Willow Grove, Pennsylvania 19090
(215) 657-6300

The Career Development Quarterly
American Association for Counseling and Development
5999 Stevenson Ave.
Alexandria, Virginia 22304
(703) 823-9800

Career Evaluation Systems, Inc.
6050 West Touhy Avenue
Chicago, Illinois 60648-4622
(312) 774-1212

Careers, Inc.
Box 135
Largo, Florida 34294-0135

CHOICES
CSG Careerware
Suite 209
2277 S. Washington St.
Alexandra, Virginia 22314

Chronicle Guidance Publications, Inc.
P.O. Box 1190
Moravia, New York 13118-1190

The Conover Company
P.O. Box 155
Omro, Wisconsin 54963
(414) 685-5707

Consulting Psychologists Press, Inc.
577 College Ave.
Palo Alto, California 94036
(415) 857-1444

Cornell University Career Center
14 East Ave.
Ithaca, New York 14853

CTB/McGraw-Hill
Del Monte Research Park
Monterey, California 93940
1-800-358-9547

Educational and Industrial Test Services (EdITS)
P.O. Box 7234
San Diego, California 92107
(619) 222-1666

Elbern Publications
P.O. Box 09497
Columbus, Ohio 43209
(614) 235-2643

Elliott & Fitzpatrick, Inc.
P.O. Box 1945
Athens, Georgia 30609

Federation of Societies of Coating Technologies
1315 Walnut St.
Philadelphia, Pennsylvania 19107
(215) 545-1506

ICD Rehabilitation and Research Center
340 East 24th. St.
New York, New York 10010
ATTN: Micro-TOWER

Industrial Psychology, Inc.
515 Madison Ave.
New York, New York 10022
(212) 355-5330

Institute for Personality and Ability Testing
P.O. Box 188
Champaign, Illinois 61820
(217) 352-4739

Jastak Associates, Inc.
1526 Gilpin Ave.
Wilmington, Delaware 19806
1-800-221-9718

Jefferson Software
Systems Software Associates, Inc.
723 Kanawha Boulevard, East
Charleston, West Virginia 25301
1-800-468-4227

Key Education, Inc.
673 Broad Street
Shrewsbury, New Jersey 07716
(201) 747-0048

Lafayette Instrument Co.
P.O. Box 5729
Lafayette, Indiana 47903
(317) 423-1505

London House Press
1550 North Northwest Highway
Park Ridge, Illinois 60068
1-800-323-5923

The Magellan Corp.
P.O. Box 10405
Tallahassee, Florida
(904) 681-6520

Martin Bruce Publishers
50 Larchwood Road
Larchmont, New York 10538
(914) 834-1555

Mississippi State University
Research and Training Center
P.O. Drawer 5365
Mississippi State, Mississippi 39762
(601) 325-2001

Munsell-Color
A Division of the Kollmorgen Corp.
2441 N. Calvert St.
Baltimore, MD 21218
(301) 243-2171

National Business Education
Association
1914 Association Drive
Reston, Virginia 20091
(703) 860-8300

National Computer Systems
(Interpretive Scoring Systems)
10901 Bren Road, East
Minnetonka, Minnesota 55343
1-800-328-6759

New Concepts Corp.
1161 N. El Dorado Place
Suite 343
Tucson, Arizona 85715
(602) 722-2245

Peterson's Guides, Inc.
Box 2123
Princeton, New Jersey 08540

Prep, Inc.
1007 Whitehead Road Extension
Trenton, New Jersey 08638
(609) 882-2668

Progressive Evaluation Systems Corp.
(PESCO)
21 Paulding St.
Pleasantville, NY 10570
1-800-431-2016

The Psychological Corporation
7500 Old Oak Blvd.
Cleveland, Ohio 44130
(216) 234-5300

Psychometric Affiliates
1620 East Main St.
Murfreesboro, Tennessee 37130

Purdue University Bookstore
P.O. Box 3028, Station 11
360 State St.
West Lafayette, Indiana 47906
(317) 743-9618

Richardson, Bellows, Henry and
Company, Inc.
Suite 610
1140 Connecticut Ave., N.W.
Washington, D.C. 20036
(202) 659-3755

Scholastic Testing Service, Inc.
480 Meyer Road
Bensenville, Illinois 60106
(312) 766-7150

Science Research Associates
155 North Wacker Drive
Chicago, Illinois 60606
1-800-621-0664

Stevens, Thuorow and Associates
100 West Monroe St.
Chicago, Illinois 60603
(312) 332-6277

Stoelting Co.
1350 South Costner Ave.
Chicago, Illinois 60623
(312) 522-4500

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

Telemetrics International
1755 Woodstead Court
The Woodlands, Texas 77380
(713) 367-0060

Valpar International Corp.
P.O. Box 5767
Tucson, AZ 85703-1510
(602) 293-1510

Vertek, Inc.
555 116 N.E., Suite 118A
Bellevue, Washington 98004
(206) 455-9921

Vocational Biographies, Inc.
Sauk Centre, Minnesota 56378

Vocational Psychological Research
N620 Elliott Hall
University of Minnesota
75 East River Road
Minneapolis, Minnesota 55455
(612) 376-7377

Vocational Research Institute
Philadelphia Jewish Vocational &
Employment Service
2100 Arch St.
Philadelphia, PA 19103
1-800-874-5387

Western Psychological Services
12031 Wilshire Blvd.
Los Angeles, California 90025
(213) 478-2061

Wolfe Personnel Testing and Training
Systems, Inc.
P.O. Box 1104, St. Laurent Station
Montreal, Quebec H4L 4W6
(201) 265-5393

Work Evaluation Systems Technology
Suite 211
16400 Pacific Coast Highway
Huntington Beach, California 92649
(213) 592-4348

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